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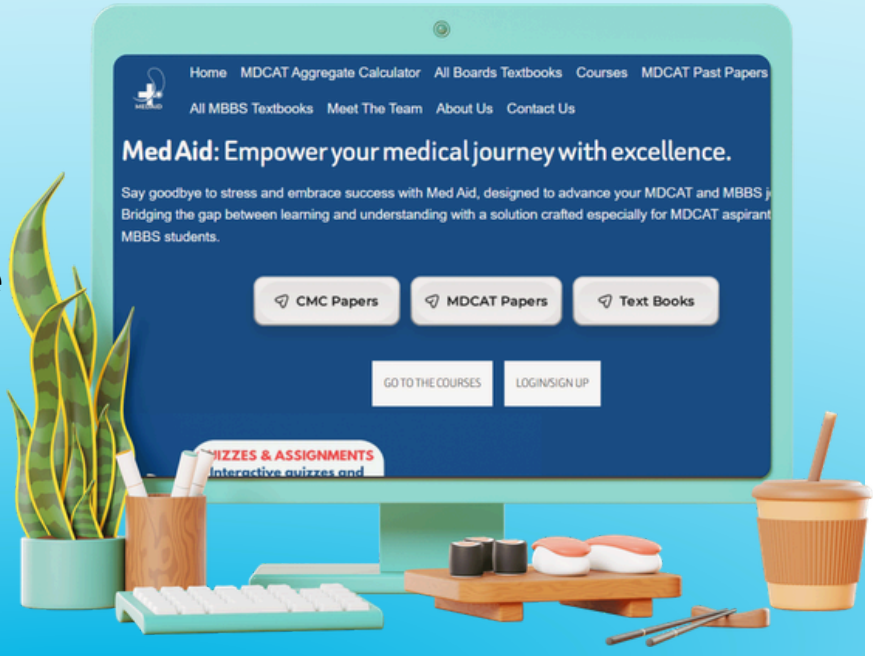

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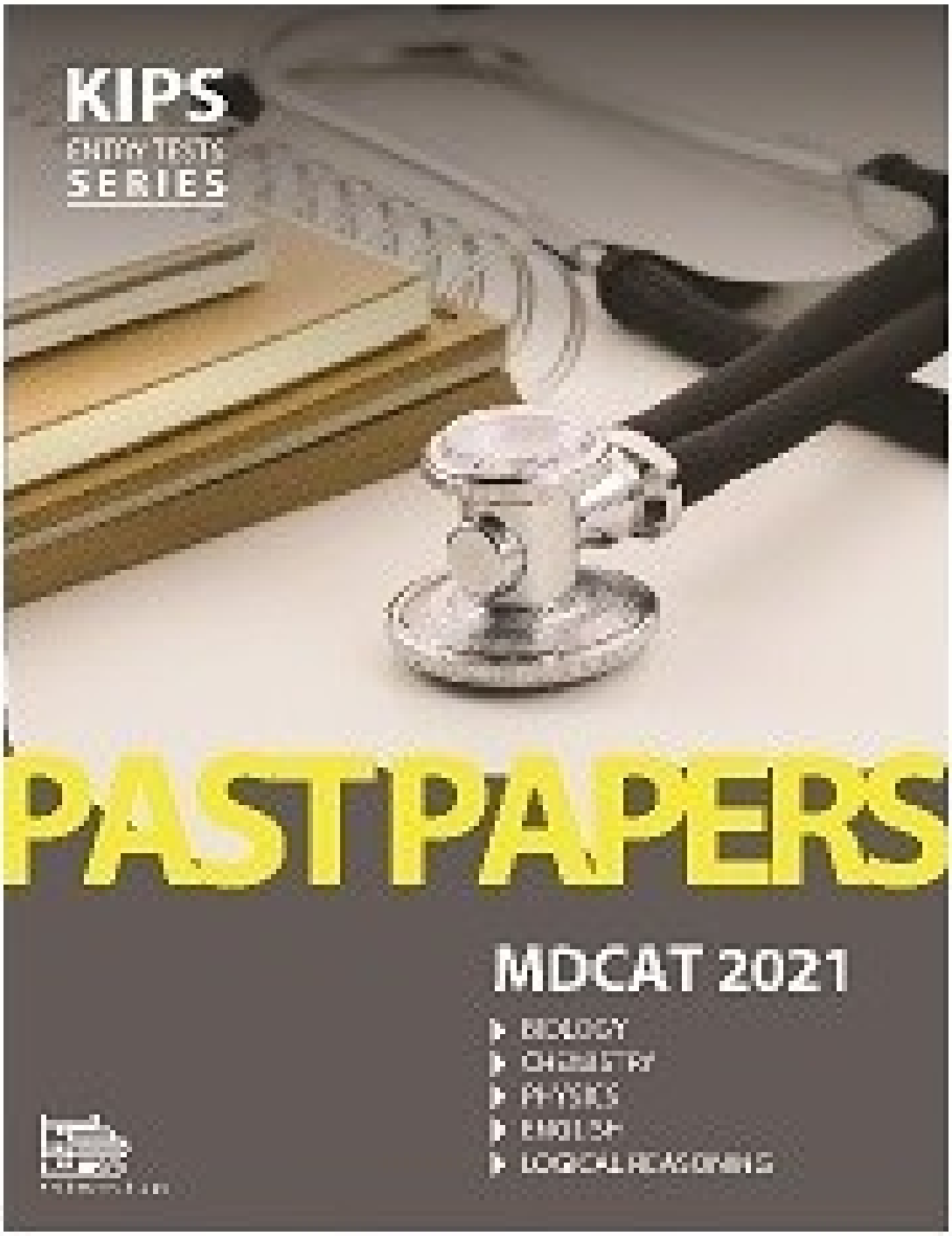
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KIPS

1 TOPIC

BIO-DIVERSITY (ACELLULAR LIFE/VARIETY OF LIFE)

PRACTICE EXERCISE

CLASSIFICATION OF VIRUSES

Q.1 Where can viruses replicate?
A. Animals
B. Plants
C. Bacteria
D. All

Q.2 These are largest animal viruses:
A. HIV
B. Poxviruses
C. Covid-19
D. HBV

Q.3 Viruses do not have:
A. Fossil record
B. Traces in history
C. Reproductive ability
D. Nucleic acid

Q.4 In plants, tumors are induced due to:
A. Bacteria
B. Virus
C. Fungi
D. All of these

Q.5 Cell theory does not explain:
A. Fungi
B. Virus
C. Algae
D. Protista

Q.6 Which of the following has no nucleic acid?
A. Bacteria
B. Virus
C. Prions
D. Viroid

Q.7 It is a biological weapon:
A. Radiation
B. Chemical
C. Virus
D. All of these

Q.8 Virus transmission is affected by:
A. Biotic factors
B. Chemical factors
C. Physical factors
D. Both A and C

Q.9 Viruses are _____ entity between living and non-living.
A. Balanced
B. Transitional
C. Threshold
D. None

Q.10 Virus when attack on unfamiliar organism, it is mutated many times and come as:
A. More virulent and dangerous
B. More mutated
C. More transmissible
D. All of these

Q.11 Viruses are classified into many groups on the basis of:
A. Nucleic acid
B. Capsid symmetry
C. Host cell infectivity
D. None of these

Q.12 Viruses use which of the following enzyme for break-down of bacterial cell wall?
A. Lysozyme
B. Lipase
C. Protease
D. Nuclease

Q.13 Viral proteins and genome in host cell are assembled at:
A. Cytoplasm
B. Cell wall
C. Cell membrane
D. Cell matrix

Q.14 Virus can bud from:
A. RER
B. Golgi complex
C. Nuclear envelope
D. All of these

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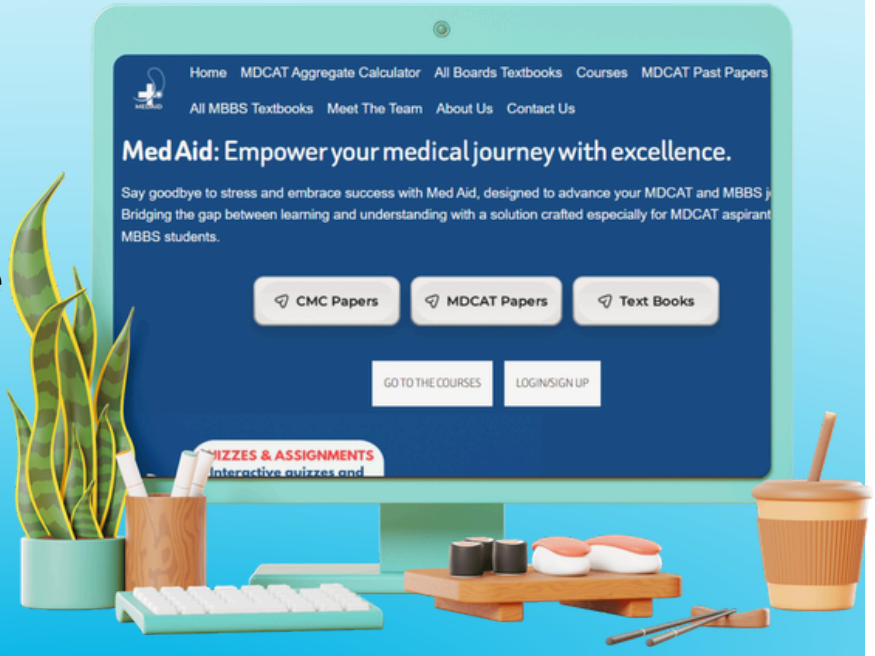

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Q.15 _____ refers to removal or breakdown of capsid.
A. Uncoating
B. Assembly
C. Integration
D. Maturation

Q.16 Which viruses enter the host cell as a whole?
A. Plant virus
B. Bacteriophages
C. Animal virus
D. None

DISCOVERY OF VIRUSES

Q.17 The branch that deals with the study of viruses is known as?
A. Entomology
B. Virology
C. Epidemiology
D. Bacteriology

Q.18 Louis Pasteur made vaccines for:
A. Rabies
B. Anthrax
C. Fowl cholera
D. All of Above

Q.19 According to Iwanowski what are soluble living germs?
A. Bacteria
B. Viruses
C. Fungi
D. Both A and B

Q.20 When was the bacteriophage phenomena rediscovered by D'Herelle?
A. 1918
B. 1917
C. 1920
D. 1990

Q.21 When were bacteriophages discovered by Twort?
A. 1915
B. 1920
C. 1910
D. 1820

Q.22 Virus that was discovered in 1901:
A. Yellow fever
B. Tobacco mosaic
C. Bacteriophages
D. Corona

Q.23 Earliest life form on earth is:
A. Virion
B. Viroid
C. Prion
D. None

STRUCTURE OF VIRUSES

Q.24 It is very stable and allows viruses to exist in water, air, and the ground:
A. Nucleoproteins
B. Nucleocapsid
C. Tail of virus
D. None of the above

Q.25 The complete, mature and infectious particle is known as:
A. Capsid
B. Virion
C. Bacteriophage
D. Nucleus

Q.26 Virus is composed of:
A. Nucleic acid and capsid
B. RNA only
C. Genome
D. Capsid

Q.27 Protein coat of a virus enclosing nucleic acid is called?
A. Vector
B. Capsid
C. Plasmid
D. Genome

Q.28 What molecule would you not expect to find in a retrovirus?
A. Adenine
B. Thymine
C. Uracil
D. Guanine

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Q.29 What is the size of Parvovirus?
A. 200nm
B. 30nm
C. 20nm
D. 100nm

Q.30 The viral DNA or RNA is protected by:
A. Shell of lipids
B. Shell of proteins
C. Shell of carbohydrates
D. Shell of amino acids

Q.31 What type of virus is the smallpox virus?
A. DNA enveloped virus
B. RNA enveloped virus
C. DNA virus
D. RNA enveloped virus

Q.32 What is the viral nucleocapsid made up of?
A. Genome and capsid
B. Capsid and spikes
C. Envelope and capsid
D. Capsomere

Q.33 What types of viruses is the poliovirus?
A. DNA enveloped virus
B. RNA enveloped virus
C. DNA naked virus
D. RNA naked virus

Q.34 Herpes simplexes are caused by which virus?
A. Adenovirus
B. Pox virus
C. Influenza Virus
D. Herpes virus

Q.35 What type of virus is the herpes simplex virus?
A. DNA enveloped virus
B. RNA enveloped virus
C. DNA virus
D. RNA naked virus

Q.36 The numbers of capsomeres found in adenovirus capsid is:
A. 162
B. 200
C. 252
D. 155

Q.37 The numbers of capsomeres found in herpes virus capsid is:
A. 162
B. 200
C. 234
D. 155

Q.38 The genome of the virus includes:
A. Deoxyribonucleic acid
B. Ribonucleic acid
C. Amino acids
D. Deoxyribonucleic acid or Ribonucleic acids

Q.39 Viruses without nuclear envelope are called as:
A. Icosahedral vims
B. Naked virus
C. Enveloped virus
D. Bilayer virus

Q.40 Which of the following are the main functions of the capsid?
A. Determines the antigenic specificity of the virus
B. Protects genetic material from nuclease attack
C. Both A and B
D. None of the above

Q.41 Which of the following statements explains why viruses are only able to multiply in living cells?
A. Their binary fission is controlled by host cell genes
B. Virus do not possess the necessary components for self-replication
C. DNA is only able to replicate inside living cells
D. They have only enough genetic information for DNA replication

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Q.42 A chemical component that is not found in all viruses is:
A. Protein
B. DNA
C. Lipids
D. RNA

Q.43 A common polyhedral capsid shape of viruses is:
A. Pentagon
B. Cube
C. Icosahedron
D. Pyramid

Q.44 Identify the true statement about virus:
A. Viruses were discovered 2 billion years ago
B. Viruses came from outer space
C. Viruses evolved before bacteria
D. Viruses can infect all type of cells

Q.45 The average diameter of large viruses is approximately:
A. 100 to 160 nm
B. 100 to 200 nm
C. 100 nm to 360 nm
D. Always below than 100 nm

Q.46 What are the subunits of capsids?
A. Capsomeres
B. Flagella
C. Hyphae
D. Septa

Q.47 Viral envelope is composed of:
A. Proteins
B. Glycoproteins
C. Lipids and proteins
D. All of the above

Q.48 It refers to the final changes within an immature virion that result in an infectious virus particle:
A. Assembly
B. Coating
C. Integration
D. Maturation

Q.49 All of the following descriptions regarding viral multiplication and nucleic acids are true except that:
A. Viruses contain DNA or RNA, not both
B. Viral mRNA, viral tRNA, and viral ribosomes are used in viral replication
C. Viruses replicate only in living cells
D. Viruses use the cell's biosynthetic machinery to synthesize copies of them

Q.50 Which of the following is not true of a virion?
A. Reproduce independently
B. Contain DNA
C. Contain RNA
D. Extracellular

Q.51 Protein coat of a virus enclosing nucleic acid is called:
A. Vector
B. Capsid
C. Plasmid
D. Genome

Q.52 What is the approximate diameter of retroviruses?
A. 150 nm
B. 100 nm
C. 200 nm
D. 250 nm

Q.53 When a virus enters a cell and incorporates its RNA or DNA into host DNA, what this stage called?
A. Lysogeny
B. Fermentation
C. Symbiosis
D. Synergism

Q.54 Phage DNA incorporated into host DNA is referred as:
A. T_4 phage
B. Provirus
C. Prophage
D. Bacteriophage

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Q.55 Infectious RNA without capsid:
A. Virion
B. Viroid
C. Prion
D. Virus

Q.56 What does the size of virus ranges between?
A. 100 mm to 150 mm
B. 20 nm to 250 nm
C. 300 nm to 3000 nm
D. 3 nm to 30 nm

Q.57 Which of the following statement is not true of viruses?
A. Viruses have been successfully grown in pure cultures in test tubes
B. All viruses are obligate intracellular parasites
C. All viruses have either DNA or RNA as their genetic material
D. Viruses probably arose from small fragments of cellular chromosomes

Q.58 What is the shape of the TMV?
A. Rod
B. Helical
C. Tadpole
D. Spherical

Q.59 In icosahedral, the capsomeres are arranged in____ triangles:
A. 100
B. 200
C. 1000
D. None of these

Q.60 In nucleus the ssDNA viral genome is converted to dsDNA by:
A. DNA polymerase
B. RNA polymerase
C. Cell enzymes
D. Proteins

Q.61 Reverse transcriptase is a useful enzyme to have when:
A. RNA virus converts its RNA to DNA
B. There are no host cells present
C. Nutrients are scarce
D. Spikes are forming in the new virus

Q.62 What is a Provirus?
A. Free virus
B. Free DNA
C. Primitive vims
D. Integrated viral genome

Q.63 The function of a viral capsid is?
A. Protection against the viral genome from physical and enzymatic destruction
B. Providing binding sites that enable the virus to attach to specific receptor sites on the host cell
C. Serving as a vehicle of transmission from one host to another
D. All of the above

Q.64 Which of the following virus is enveloped?
A. Adenovirus
B. Herpes virus
C. Poliovirus
D. None of these

Q.65 Which of the following is not a described type of virus?
A. Virus containing double strand DNA
B. Virus containing single strand DNA
C. Virus containing single strand RNA
D. Virus containing single strand RNA and single strand DNA

Q.66 The size of viruses is usually measured in:
A. Centimeters
B. Micrometers
C. Nanometers
D. Millimeters

Q.67 Icosahedral viruses have how many faces?
A. 20
B. 30
C. 10
D. 40

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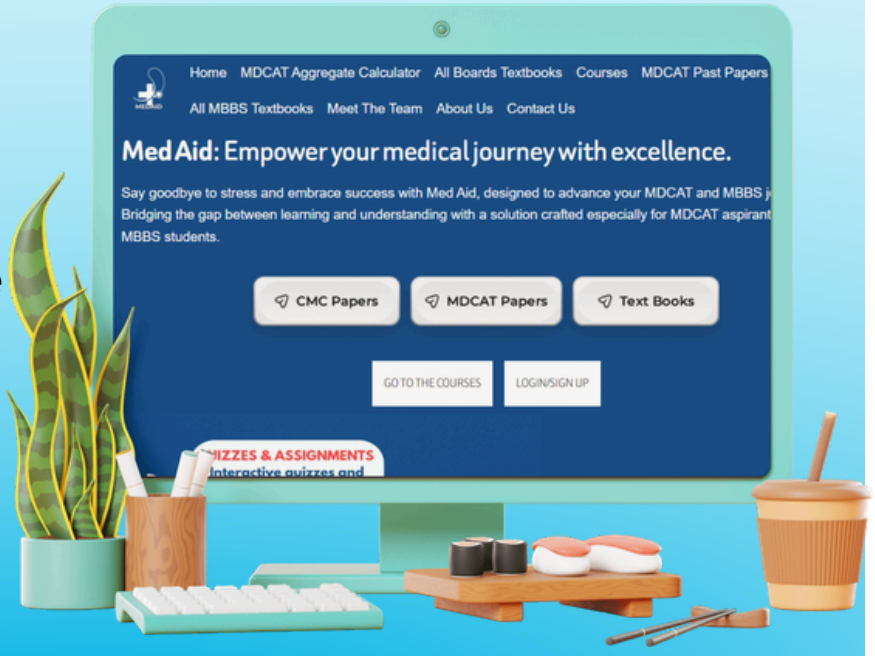

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Q.68 Virus differ from bacteria by:
A. Having capsids
B. Having DNA
C. Having RNA
D. Having ribosomes

Q.69 It is not true about viruses:
A. Capsid has capsomeres
B. Both DNA and RNA together as genome
C. Some are enveloped
D. Many infect animals

Q.70 Causative agent of small pox is:
A. DNA enveloped virus
B. RNA enveloped virus
C. DNA virus
D. RNA naked virus

Q.71 Which of the following statements are true about the viruses?
A. Free living
B. Obligate parasites
C. Both A and B
D. None of the above

Q.72 Which factors may help to determine the antigenicity of a virus?
A. Capsomeres
B. Size of virus
C. Whole capsid
D. Internal proteins

Q.73 Which of the following has morphology of a helical virus?
A. TMV
B. T4 Phage
C. Poxvirus
D. Herpes virus

Q.74 HBV is:
A. DNA enveloped virus
B. RNA enveloped virus
C. DNA Virus
D. RNA naked virus

.75 A structure which is located between the nucleocapsid and the envelope:
A. Capsid
B. Matrix protein
C. Envelop
D. Nucleocapsid

Q.76 Viroids lacks:
A. RNA
B. Enzyme
C. Protective protein coat
D. All of these

Q.77 What type of viruses are the paramyxoviruses?
A. DNA enveloped virus
B. RNA enveloped virus
C. DNA virus
D. Naked virus

Q.78 Which of the following viruses possess an envelope?
A. Herpes virus
B. Reovirus
C. Polio virus
D. Papillomavirus

Q.79 What does an icosahedral capsid consists of?
A. Hexagonal capsomeres
B. Pentagonal capsomeres
C. Triangular Capsomeres
D. Both A and B

Q.80 Viruses are limited in their host range because?
A. Can only replicate in certain types of cells
B. Certain cells are susceptible to viral infections
C. They can only enter cells that have proper/specific receptors
D. They can only enter cells with glycoproteins

Q.81 Viruses replicate on their own:
A. Too small
B. Lack metabolic machinery
C. Have no cell wall
D. All of these

Q.82 It is incorrect about virus:
A. Acellular nature
B. DNA
C. RNA
D. Metabolism

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VIRAL DISEASE (FOR EXAMPLE AIDS)

Q.83 The Long chains of HIV-Proteins is cut down by proteases of:
A. HIV
B. Host proteases
C. Both viral and host proteases
D. None of these

Q.84 Whenever a virus encounters an unfamiliar organism, the virus may undergo multiple mutations and emerge as a variant that produces:
A. Severe and novel disease
B. Novel disease
C. Non mutated
D. None of these

Q.85 In which year causative agent of AIDS was named?
A. 1986
B. 1980
C. 1992
D. 1970

Q.86 The Herpes virus is responsible for which of the following types of Herpes?
A. Simplex
B. Quadruplex
C. Triplex
D. Duplex

Q.87 Edward Jenner prepared vaccine against:
A. Small pox
B. Mumps
C. Measles
D. Chicken pox

Q.88 Major cell infected by HIV:
A. T killer lymphocytes
B. T helper lymphocytes
C. T suppressor lymphocytes
D. T memory lymphocytes

Q.89 Which of the following molecule facilitates the entry of HIV in human body?
A. Liposomes
B. Glycoprotein
C. Polysaccharides
D. Lipopolysaccharides

Q.90 Prominent symptoms of AIDS:
A. Pneumonia
B. Rapid weight loss
C. Extreme and unexplained tiredness
D. All of these

Q.91 For the synthesis of mRNA, HIV uses:
A. Viral RNA polymerase
B. Cytoplasmic RNA polymerase
C. Host RNA polymerase
D. None of the above

Q.92 A person with viral load of HIV 1 if untreated leads to:
A. Cancer
B. Hepatitis
C. Jaundice
D. AIDS

Q.93 Which of the following is more virulent?
A. HIV-2
B. HIV-1(a)
C. HIV-1
D. HIV-2 (a)

Q.94 There is no vaccine against HIV. What is the possible reason for this?
A. Virus mutates rapidly
B. Vaccine is very expansive
C. Vaccine can be controlled by change in hygiene
D. None of these

Q.95 HIV mainly attacks on:
A. CD_4 site of T cells
B. B cells
C. White blood cells
D. None of these

Q.96 Chimpanzee has _____ instead of HIV.
A. SIV
B. CIV
C. HBV
D. HIV-2

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Q.97 AIDS is caused:
A. Human immunodeficiency virus
B. Paramyxoviruses
C. Influenza Virus
D. Retroviruses

Q.98 What is meant by HIV-Positive?
A. A person has AIDS
B. A person having two positive tests for HIV
C. A person can transmit the HIV
D. A person is safe from aids

Q.99 The replication of the HIV nucleic acid depends on:
A. Replicase
B. Reverse transcriptase
C. Transcriptase
D. Reverse replicase

Q.100 Viral genome in integrated into host genome by which of the following enzymes?
A. Integrase
B. DNA incorporase
C. Reverse transcriptase
D. Protease

Q.101 Three stages of HIV infection are:
A. Acute infection → Chronic infection → AIDS
B. AIDS → Acute infection → Chronic infection
C. Chronic infection → AIDS → Acute infection
D. Acute infection → AIDS → Chronic infection

Q.102 Mumps and Measles are caused by which of the following?
A. Adenoviruses
B. Pox viruses
C. Influenza viruses
D. Paramyxoviruses

Q.103 HAV is transmitted by:
A. Faeces
B. Sexual contact
C. Blood
D. All of these

Q.104 _____ is usual causative agent of genital herpes.
A. HSV-1
B. HSV-2
C. Both A and B
D. None of these

Q.105 When did experimental administration of the HIV virus begin?
A. 2001
B. 1999
C. 2005
D. 2000

Q.106 Pigs are reservoir of:
A. HAV
B. HBV
C. HCV
D. HEV

Q.107 Which of the following statement correctly describes the tobacco mosaic virus?
A. RNA virus
B. DNA virus
C. Bacteriophage
D. dsDNA virus

Q.108 Pox virus is different from all others due to:
A. Structure
B. Size
C. Nucleic acid
D. All of above

Q.109 A remarkable feature of pox virus:
A. Largest in size
B. DNA genome
C. Envelope
D. None of these

Q.110 It is true about Mumps:
A. Can affect testes and ovaries
B. Passive immunization is only treatment
C. Vaccine is not available for this
D. Widely spread

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Q.111 Genetically engineered vaccine is available for which of the following hepatitis virus?
A. HBV
B. HAV
C. HCV
D. Both A and B

Q.112 Poxvirus has:
A. Double stranded DNA
B. Single stranded DNA
C. Double stranded RNA
D. Both A and C

Q.113 For attachment rabies virus bind to:
A. Complement receptor
B. Integrin ICAM-1
C. Acetylcholine receptor
D. Epidermal growth factor

Q.114 Where does the AIDS virus infect?
A. RBCs
B. Platelets
C. Leukocytes
D. None

Q.115 Which specialized enzyme do retrovirus have?
A. DNA polymerase
B. Ligase
C. Reverse transcriptase
D. Helicase

Q.116 Hepatitis D also known as:
A. Serum hepatitis
B. Infectious hepatitis
C. Bacterial hepatitis
D. Delta hepatitis

Q.117 How the HIV is transmitted?
A. Sexual contact
B. Blood
C. Breast feeding
D. All of the above

Q.118 Which of the following is not a viral disease?
A. Smallpox
B. AIDS
C. Tetanus
D. Cowpox

Q.119 Which of the following is not a component of HIV?
A. RNA
B. Ribosomes

Q.120 HIV differs from many viruses because it has high genetic:
A. Sensitivity
B. Complexity
C. Variability
D. Viability

Q.121 Influenza virus protein HA binds with _____ residues found on the surface of respiratory epithelial cells.
A. Uncoding protein
B. Sialic acid
C. Antigen P
D. Antigen HI

Q.122 All are HIV symptoms except:
A. Sore throat, chills, fever, body aches
B. Chills, fever, flu, muscle cramps
C. Cardiac arrest, bloody stools, chills
D. Rash, fatigue, mouth ulcers

Q.123 SIV is the abbreviation of:
A. Simian immunodeficiency virus
B. Silurian immunodeficiency virus
C. Siberian immunodeficiency virus
D. Both A and C

Q.124 The enzyme which plays important role in HIV pathogenesis:
A. RNA polymerase I
B. DNA polymerase II
C. Reverse Transcriptase I
D. Reverse Transcriptase

Q.125 All of the following are the current preventive methods of HIV infection except:
A. Safe and protected lifestyle
B. Use of sterile injections and needles
C. Use of available vaccines
D. Safe blood transfusion methods

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Q.126 Influenza is caused by:
A. Adenovirus
B. Pox virus
C. Influenza Virus
D. Herpes virus

Q.127 This locks the HIV genome into capsid:
A. Gag protein
B. Env protein
C. Pol protein
D. All of these

Q.128 The genetically engineered vaccine is not available for which of the following?
A. HAV
B. HCV
C. HBV
D. HDV

Q.129 In what year did WHO declare that smallpox was completely eradicated?
A. 1990
B. 2001
C. 1980
D. 1995

Q.130 AIDS was firstly reported in which types of individuals?
A. Heterosexuals
B. Homosexuals
C. Both
D. None

Q.131 Mad cow disease is caused by which of the following:
A. Prion
B. Virus
C. Bacteria
D. Both A and B

Q.132 _____is associated with a number of tumors in humans:
A. HSV-2
B. Varicella-zoster virus
C. Oncoviruses
D. Picomavirus

Q.133 Which virus causes the second major form of hepatitis?
A. Hepatitis A
B. Hepatitis B
C. Hepatitis C
D. Hepatitis D

Q.134 Which can convert normal cells into cancer cells?
A. Retrovirus
B. Adenovirus
C. Poliovirus
D. All

Q.135 People with chronic hepatitis are at risk of:
A. kidney damage
B. Liver damage
C. Heart damage
D. Lung damage

Q.136 Virus for making viral DNA uses whose RNA polymerase:
A. Host
B. Viral
C. Encoded by viral genome
D. None

Q.137 Retro viruses are characterized by:
A. Lack envelope
B. Have no capsid
C. Reverse transcriptase enzyme
D. DNA genome

DUT OF SYLLABUS

Q.138 Bacteriophages, or phages are also known as:
A. Bacteria facilitator
B. Bacteria eater
C. Animal viruses
D. Plant viruses

Q.139 The bacteriophage incorporates in the viral genome in which phase?
A. Lysogenic cycle
B. Both
C. Lytic cycle
D. None

Q.140 How many bacteriophages are formed after 25 minutes of initial infection?
A. 250
B. 200
C. 150
D. 100

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Q.141 What is the first step in the replication of bacteriophage?
A. Replication
B. Penetration
C. Attachment
D. Injection

Q.142 Viruses that attack bacteria are called:
A. Virophage
B. Lysophage
C. Bacteriophage
D. None of the above

Q.143 Where the double stranded DNA of the bacteriophage is found?
A. Tail
B. Sheath
C. Collar
D. Head

Q.144 The phage that causes the lytic cycle is called:
A. Virulent phage
B. Lytic phage
C. Temperate phage
D. Both A and B

Q.145 During lytic cycle how many phages are released from infected host cell:
A. 100-300
B. 100-500
C. 100-200
D. 100-400

Q.146 Bacteriophages have been used widely in genetic research, since they are the smallest and simplest biological entities capable of:
A. Self-replication in host cell
B. Duplication
C. Self-duplication
D. Multiplication in host cell

Q.147 Binary fission occurs in which stage of the bacteriophage life cycle?
A. Lysogenic cycle
B. Lytic cycle
C. Both A and B
D. None

Q.148 The structure of which bacteriophage resembles a tadpole?
A. T_2
B. T_4
C. Both A and B
D. None

Q.149 These viruses usually occur in two structural forms:
A. HIV
B. HCV
C. Bacteriophage
D. COVID-19

Q.150 In which step is lysozyme released by the bacteriophage?
A. Attachment
B. Penetration
C. Injection
D. Replication

Q.151 What type of the phage is a T_2 Phage?
A. ssDNA Phage
B. dsDNA phage
C. ssRNA Phage
D. ds RNA Phage

Q.152 Which type of viruses infect *E. coli* bacteria?
A. T phages
B. P phages
C. Both A and B
D. None

Q.153 What is the function of lysozyme released by bacteriophages?
A. Injecting DNA
B. Replication
C. Dissolve bacterial cell wall
D. All of these

Q.154 Where does the bacteriophage replicate?
A. Human
B. Horse
C. Bacteria
D. Animal

Q.155 The phage that causes the lysogenic cycle is?
A. Virulent phage
B. Lytic phage
C. Temperate phage
D. Both A and B

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Q.156 When the tobacco mosaic virus was successfully crystallized?
A. 1935
B. 1930
C. 1932
D. 1920

Q.157 They show complexity:
A. Influenza virus
B. Herpes virus
C. T_4 virus
D. All of these

Q.158 Viral DNA, incorporated into bacterial DNA, is called:
A. T_4 phase
B. Bacteriophage
C. Prophage
D. Lytic phage

Q.159 What was the correct classification according to Linnaeus?
A. Similar genera in one family
B. Similar species in one genus
C. Similar families in one order
D. All of above

Q.160 Pathogens inside body are killed by:
A. Antibodies
B. Immune system cells
C. Interferon
D. All of these

Q.161 Binomial nomenclature was introduced by:
A. C. Linnaeus
B. L. Margulis
C. J. Schleiden
D. R. Whittaker

ANSWER KEY

1	D	21	A	41	B	61	A	81	B	101	A	121	B	141	C	161	A
2	B	22	A	42	C	62	D	82	D	102	D	122	C	142	C		
3	A	23	D	43	C	63	D	83	A	103	A	123	A	143	D		
4	D	24	B	44	D	64	B	84	B	104	A	124	D	144	D		
5	B	25	B	45	B	65	D	85	A	105	A	125	C	145	C		
6	C	26	A	46	A	66	C	86	A	106	D	126	C	146	D		
7	C	27	B	47	C	67	A	87	A	107	A	127	A	147	A		
8	D	28	B	48	A	68	A	88	B	108	B	128	B	148	B		
9	B	29	C	49	B	69	B	89	B	109	A	129	C	149	C		
10	D	30	B	50	A	70	A	90	D	110	D	130	B	150	B		
11	B	31	A	51	B	71	B	91	C	111	D	131	A	151	B		
12	A	32	A	52	B	72	A	92	D	112	A	132	C	152	A		
13	A	33	D	53	A	73	A	93	C	113	C	133	B	153	C		
14	D	34	D	54	C	74	A	94	A	114	C	134	A	154	C		
15	A	35	A	55	B	75	B	95	A	115	C	135	B	155	C		
16	C	36	C	56	B	76	C	96	A	116	D	136	A	156	A		
17	B	37	A	57	A	77	B	97	A	117	D	137	C	157	C		
18	D	38	D	58	A	78	A	98	A	118	C	138	B	158	C		
19	B	39	B	59	D	79	A	99	B	119	B	139	A	159	D		
20	B	40	C	60	AA	80	C	100	A	120	C	140	B	160	D		

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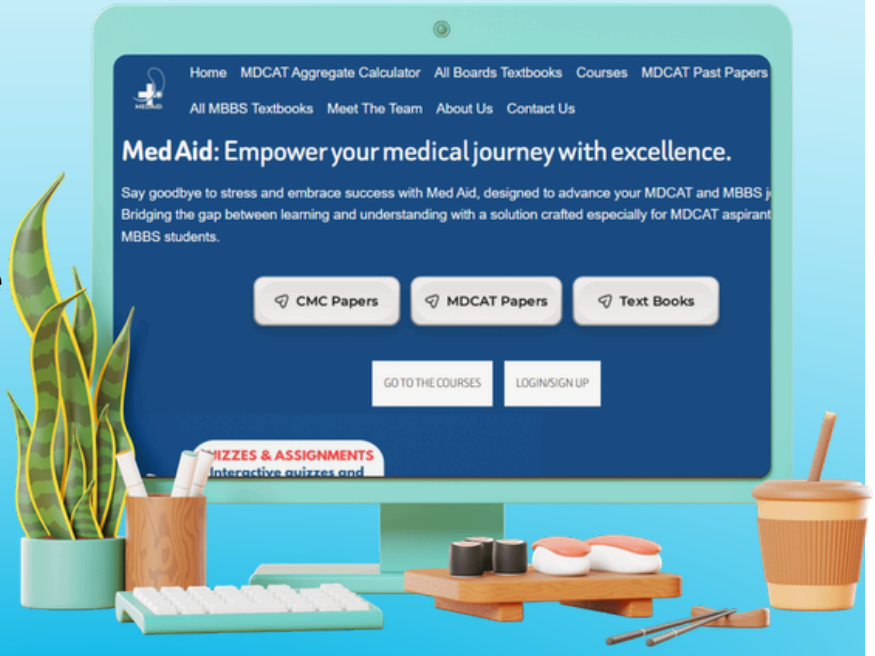

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2 TOPIC BIO-ENERGETIC PRACTICE EXERCISE

ANAEROBIC RESPIRATION (RESPIRATION WITHOUT OXYGEN)

Q.1 Fermentation products produced by the yeast are:
A. $H_2O + CO_2$
B. Methyl alcohol + CO_2
C. Methyl alcohol + CO_2
D. Ethyl alcohol + CO_2

Q.2 In anaerobic respiration only _____% of the energy present within the chemical bond of glucose is converted into ATP.
A. 1
B. 2
C. 3
D. 4

Q.3 In which of the following component of the body, lactic acid fermentation takes place?
A. Heart
B. Brain
C. Liver
D. Muscles

Q.4 In alcoholic fermentation pyruvic acid is broken down into?
A. Acetaldehyde
B. Methyl alcohol
C. Ethyl alcohol
D. Lactic Acid

Q.5 Pyruvate is broken down to_____ in yeast.
A. Acetyl CoA
B. Alcohol
C. Lactic acid
D. All of these

Q.6 Lactic acid is produced as a result of:
A. Glycolysis
B. Anaerobic respiration
C. Aerobic respiration
D. ALL A, B, C

Q.7 Which of the following is not respiration?
A. Breakdown of glucose
B. Formation of glucose
C. Release of energy
D. Exchange of gases

ELECTRON TRANSPORT CHAIN

Q.8 Oxygen plays ___ role in respiration.
A. It combines with acetyl-CoA at the start of the Krebs cycle
B. It plays no role
C. It is given off as a by-product during the oxidation of pyruvates
D. It is the final electron acceptor at the end of the electron transport chain

Q.9 What is the product of the ETC in animals?
A. Oxygen
B. Carbon dioxide
C. Water
D. All of these

Q.10 Cytochromes are electron transport intermediates containing:
A. Myoglobin
B. Haem
C. Globulin
D. Fibrin

Q.11 How does the electron transport system generate ATP?
A. Symbiosis
B. Chemiosmosis
C. Both A and B
D. None of these

Q.12 What is the end product of the ETC in animals?
A. ATP
B. Carbon dioxide
C. Water
D. Both A and C

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Q.13 Final acceptor of electrons in respiratory chain is?
A. NADH
B. Cytochrome a3
C. Water
D. Oxygen

Q.14 Cytochrome a is oxidised by which of the following in ETC?
A. Carbon dioxide
B. Oxygen
C. ATP
D. Cytochrome a3

Q.15 What is the copper containing protein involved in the ETC in plants?
A. Pq
B. Pc
C. Pt
D. Po

Q.16 Coenzyme Q is oxidized by which coenzyme?
A. Coenzyme c
B. Coenzyme q
C. Cytochrome b
D. Cytochrome a

Q.17 Cytochrome b is reduced by:
A. Cytochrome c
B. Coenzyme Q
C. NADH
D. Cytochrome a

Q.18 Cancer cells require large amounts of ATP. Which of the following produce high number of ATP?
A. Glycolysis
B. Krebs cycle
C. Oxidative phosphorylation
D. Electron transport chain

Q.19 Enzymes for oxidative phosphorylation are present on:
A. Cristae
B. Inner compartment
C. Outer compartment
D. Outer membrane

Q.20 Electrons from NADH accepted by oxygen forms how many ATPs?
A. 2
B. 3
C. 4
D. 1

Q.21 Electron transport chain occurs in:
A. Inner membrane of mitochondria
B. Outer compartment of mitochondria
C. Thylakoid membrane
D. Both A and C

Q.22 Terminal carrier of cytochrome complex present in ETC:
A. Q
B. C
C. a
D. None

Q.23 NADH is oxidized by:
A. Co-enzyme Q
B. Cytochrome b
C. Cytochrome c
D. Cytochrome a

GLYCOLYSIS/GLYCOLYTIC PATHWAY/AEROBIC RESPIRATION

Q.24 $FADH_2$ is produced during:
A. Glycolysis
B. The oxidation of pyruvates
C. Krebs cycle
D. All of these

Q.25 Complete breakdown of glucose molecule takes place in which of the following?
A. Alcoholic fermentation
B. Lactic acid fermentation
C. Aerobic respiration
D. None of these

Q.26 Glycolysis takes place in:
A. Nucleus
B. Cytosol
C. Mitochondria
D. Ribosomes

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Q.27 Phosphofructokinases enzyme converts fructose-6-phosphate into:
A. Fructose-1, 4-phosphate
B. Fructose-1,6-bisphosphate
C. Bisphosphate
D. Fructose

Q.28 What is the coenzyme that facilitates the oxidation of fumarate?
A. FAD
B. $PADH_2$
C. NAD
D. NADPH

Q.29 Where does the first stage of cellular respiration occur?
A. Cytosol
B. Membrane surface
C. Nucleus
D. All of these

Q.30 Acetyl CoA completely is oxidized to carbon dioxide and liberate:
A. NADH and FAD
B. NADP and FADP
C. ATP
D. ATP, NADH and FADH

Q.31 Which process can'take place in the presence and absence of oxygen?
A. Glycolysis
B. Pyruvic acid oxidation
C. Krebs cycle
D. Electron transport chain

Q.32 What energy rich organic compound is produced as a result of the Calvin cycle?
A. NADPH
B. CO_2
C. ATP
D. Glucose

Q.33 Oxaloacetate combines with which molecule to enter the Krebs cycle again?
A. ATP
B. NADPH
C. FAD
D. Acetyl CoA

Q.34 Hexokinase plays role in:
A. Krebs cycle
B. Electron transport chain
C. Glycolysis
D. Pyruvate oxidation

Q.35 Glucose is converted to _____ before entering Krebs cycle.
A. Pyruvate
B. Lactic acid
C. Acetyl CoA
D. Ethanol

Q.36 Hexokinase is the enzyme found in
A. Glycolysis and pentose pathway
B. Pentose pathway only
C. Glycolysis only
D. Krebs cycle

Q.37 Succinate is oxidized and form:
A. FAD
B. FADH
C. $FADH_2$
D. $NADH_2$

Q.38 If a molecule is reduced it gains:
A. Energy
B. Electrons
C. Hydrogen protons
D. All of above

Q.39 ATP synthase is located in the of the mitochondrion:
A. Intermembrane space
B. Outer membrane
C. Matrix
D. Inner membrane

Q.40 What is the final product of the Krebs cycle?
A. Malate
B. Succinate
C. Oxaloacetate
D. Fumarate

Q.41 From one pyruvate passing through Krebs cycle, how many NADH are formed?
A. 1
B. 2
C. 3
D. 4

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PMC Topic-2

Q.42 Cellular respiration is essentially what type of process:
A. Oxidation
B. Reduction
C. Redox
D. None of the above

Q.43 What are products of respiration in plants?
A. CO_2 and H_2O
B. CO_2, H_2O and ATP
C. $C_6H_{12}O_6$ and H_2O
D. None

Q.44 The pay-off phase of glycolysis conserve:
A. Molecules of glucose
B. ATP
C. Molecules of fructose
D. water

Q.45 Fatty acid release considerable amount of energy in oxidation during:
A. Calvin cycle
B. Krebs cycle
C. Dark reaction
D. Light reactions

Q.46 How many carbons does citrate have in the Krebs cycle?
A. 5
B. 6
C. 8
D. 4

Q.47 What is formed at the end of the preparatory phase of glycolysis?
A. G_3P
B. Dihydroxyacetone phosphate
C. Pyruvate
D. Both A and B

Q.48 End product of citric acid cycle:
A. Pyruvate
B. CO_2 and H_2O
C. CO_2
D. Lactic acid

Q.49 Oxaloacetate contains how many carbon atoms?
A. 4
B. 5
C. 6
D. 2

Q.50 $FADH_2$ is produced in?
A. Glycolysis
B. Pyruvic acid oxidation
C. Krebs cycle
D. None

Q.51 Hans Krebs discovered_____.
A. Glycolysis
B. Fermentation
C. Pyruvate oxidation
D. Citric acid cycle

LIGHT DEPENDENT AND LIGHT INDEPENDENT PHASES/REACTIONS

Q.52 Which of the following organisms have the greatest problem with photorespiration?
A. C_4 plants
B. Heterotrophs
C. C_3 plants
D. CAM plants

Q.53 In which stage of photosynthesis, ATP and NADPH are converted to ADP+Pi and $NADP^+$?
A. Light dependent reaction
B. Light independent reaction
C. Both of these
D. None of above

Q.54 The stage of photosynthesis that actually produces sugar is_____.
A. Calvin cycle
B. Photosystem I
C. Photosystem II
D. The light reaction

Q.55 ATP molecules are consumed during which process?
A. Glycolysis
B. Light dependent phase
C. Krebs cycle
D. None

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Q.56 Molecular oxygen is released during:
A. Calvin cycle
B. Light reactions in photosynthesis
C. Krebs cycle
D. Glycolysis

Q.57 When is sugar formed in photosynthesis?
A. Light independent reactions
B. Light dependent reactions
C. Both A and B
D. None of these

Q.58 Which one is a light gathering structure?
A. Antenna complex
B. Reaction center
C. Photosystem
D. None of these

Q.59 Molecular formula of chlorophyll b is:
A. $C_{55} H_{10} O_4 N_6 Mg$
B. $C_{55} H_{70} O_6 N_5 Mg$
C. $C_{55} H_{71} O_6 N_4 Mg$
D. $C_{55} H_{70} O_6 N_4 Mg$

Q.60 Light reaction takes place in/on:
A. Chloroplast
B. Stroma
C. Thylakoids
D. Grana

Q.61 Calvin cycle is:
A. Inhibited by light
B. Supported by light
C. Independent of light
D. Dependent upon light

Q.62 RuBisCO converts addition of _____ with RUBP to glyceraldehyde 3-phosphate.
A. ATP
B. O_2
C. NADH
D. CO_2

Q.63 Location of dark reactions in chloroplast:
A. Inner membrane
B. Grana
C. Stroma
D. Thylakoid

Q.64 How many number of carbon atoms are present in a molecule of RUBISCO?
A. 4
B. 6
C. 5
D. 7

Q.65 How many carbon atoms are present in Ribulose phosphate?
A. 5
B. 4
C. 6
D. 3

Q.66 It moves in cyclic manner in cyclic photophosphorylation:
A. Oxygen
B. Electrons
C. ATP
D. NADPH

Q.67 How many molecule/s of carbon dioxide enter the Calvin cycle to produce one molecule of carbohydrate?
A. 2
B. 3
C. 4
D. 1

Q.68 Which enzyme is found in the thylakoid membrane that facilitates chemiosmosis?
A. ATP ligase
B. ATP kinase
C. ATP synthase
D. ATP dehydrogenase

Q.69 Out of the 6 molecules of G_3P, how many molecules are used to make glucose?
A. 1
B. 3
C. 3
D. 4

Q.70 What does ATP provide during photosynthesis?
A. Mechanical energy
B. Physical energy
C. Chemical energy
D. All of these

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PMC Topic-2

Q.71 Which reaction is catalysed by the enzyme RuBisCO?
A. Carboxylation of ribulose bisphosphate (RuBP)
B. Conversion of triose phosphate (TP) to ribulose phosphate (RuP)
C. Oxidation of glycerate-3 -phosphate (GP)
D. Reduction of glycerate-3-phosphate (GP)

Q.72 Enzymes for light-dependent reactions are present in:
A. Outer membrane of the chloroplast
B. Inner membrane of the chloroplast
C. Stroma of the chloroplast
D. Thylakoid membranes of the chloroplast

Q.73 The water splitting step of photosynthesis is called?
A. Chemiosmosis
B. Hydrolysis
C. Photolysis
D. Photosynthesis

Q.74 In photosynthesis dark reaction, is called so because:
A. It occurs in dark
B. It does not require light energy
C. It cannot occur during daytime
D. It occurs more rapidly at night

Q.75 How much net gain of G_3P is obtained after one Calvin cycle?
A. 3
B. 6
C. 2
D. 1

Q.76 Which one of these occur in dark reactions of photosynthesis?
A. Formation of ATP
B. Release of oxygen
C. Release of hydrogen
D. Synthesis of PGAL

Q.77 The path of electrons through the two photosystems is called?
A. S scheme
B. X scheme
C. Z scheme
D. Y scheme

Q.78 The G_3P is the end product of:
A. Krebs cycle
B. Calvin cycle
C. Chemiosmosis
D. Electron transport chain

Q.79 Cooperation of the two photosystems of the chloroplast is required for_____.
A. ATP synthesis
B. Reduction of NADP
C. Cyclic photophosphorylation
D. Oxidation of the reaction center of photosystem I

Q.80 The part of chloroplast where CO_2 is fixed to manufacture sugar is?
A. Stroma
B. Grana
C. Thylakoid
D. Outer membrane

Q.81 $NADPH_2$ provides which of the following?
A. Assimilatory power
B. Energized electron
C. Chemical energy
D. Both A and B

Q.82 The ATP synthesis in plants during the ETC is called?
A. Photophosphorylation
B. Photolysis
C. Chemiosmosis
D. All of these

Q.83 Which molecule passes the mitochondrial membrane to begin the Krebs cycle?
A. ATP
B. Acetyl CoA
C. NADH
D. ADP

Q.84 The most important photosynthetic pigment is:
A. Chlorophyll a
B. Chlorophyll b
C. Xanthophyll
D. Carotenes

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Q.85 For every 3 molecules of carbon dioxide in Calvin cycle how much G3P is produced?
A. 6
B. 2
C. 4
D. 8

Q.86 Find out the correct sequence for movement of electrons during the light dependent reaction:
A. p680, p700, water, NADP
B. Water, p700, NADP, p680
C. p700, p680, NADP, water
D. Water, p680, p700, NADP

Q.87 Photosystem I absorbs maximum wavelength of light?
A. 700
B. 600
C. 750
D. 770

Q.88 Which two reactions occur during photophosphorylation?
A. ATP is hydrolyzed and NADP is reduced
B. ATP is hydrolyzed and NADPH is oxidized
C. ATP is synthesized and NADP is reduced
D. ATP is synthesized and NADPH is oxidized

Q.89 Photosystems are located in:
A. Stroma
B. Chloroplast envelope
C. Thylakoid membranes
D. Intergranam

Q.90 What are the different stages of the Calvin cycle?
A. Carbon fixation
B. RUBP
C. Reduction
D. A and C

Q.91 Carbon dioxide is fixed in
A. Light reaction
B. Dark reaction
C. Aerobic respiration
D. Anaerobic respiration

Q.92 The reaction of carbon dioxide and RUBP is catalyzed by?
A. ATP synthase
B. Globulin
C. RuBisCo
D. NADH dehydrogenase

Q.93 Chlorophylls are found embedded in the_____ membranes.
A. Stroma
B. Grana
C. Thylakoid
D. Intergrana

Q.94 Which statement correctly outlines some of the main events in photosynthesis?
A. A 5C carbohydrate accepts carbon dioxide and is then reduced by NADPH derived from photosynthesis
B. A 3C carbohydrate is regenerated and reduced by hydrogen molecules derived from photophosphorylation
C. Photolysis uses light to produce reduced NADP and oxygen which are used to reduce a 3C carbohydrate
D. Photolysis produces NADPH and ATP which are used to reduce a 5C carbohydrate

OXIDATIVE PHOSPHORYLATION /CYCLIC AND NON- CYCLIC PHOSPHORYLATION

Q.95 Cooperation of the two photosystems of the chloroplast is required for:
A. ATP synthesis
B. Reduction of $NADP^+$
C. Cyclic photophosphorylation
D. Oxidation of the reaction center of photosystem I

Q.96 It is most energy rich compound:
A. $FADH_2$
B. ATP
C. NADH
D. GTP

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Q.97 The synthesis of ATP in the presence of oxygen is called:
A. Respiration
B. Calvin cycle
C. Oxidative phosphorylation
D. Chemiosmosis

Q.98 Where does the molecular mechanism of oxidative phosphorylation take place?
A. Cytosol
B. Mitochondria
C. Nucleus
D. All of these

PHOTOSYNTHESIS

Q.99 Photosystem II has molecules which absorbs maximum light of:
A. 680 nm
B. 100 nm
C. 700 mil
D. 670nm

Q.100 The point at which there is no net exchange of gases between leaves and atmosphere is known as?
A. Neutral point
B. Compensation point
C. Parallel point
D. Competitive point

Q.101 If more oxygen is present, the RuBisCO starts:
A. Respiration
B. Photorespiration
C. Carboxylase
D. None of these

Q.102 Which type of light causes the highest rate of photosynthesis?
A. Blue
B. Red
C. Orange
D. Violet

Q.103 About what % of photosynthesis is carried by terrestrial plants, while rest occurs in ocean, lakes, and ponds
A. 40
B. 10
C. 20
D. 30

Q.104 Which cells absorb carbon dioxide in leaf?
A. Neutrophil cells
B. Basophil cells
C. Mesophyll cells
D. All of these

Q.105 Bacteriochlorophylls do not include which of the following?
A. Chlorophyll a
B. Chlorophyll c
C. Chlorophyll b
D. All of these

Q.106 The part of chlorophyll molecule that is embedded in the core of thylakoid membrane is:
A. Hydrophilic
B. Hydrophobic
C. Both of these
D. None of these

Q.107 The electrons from Ferrodoxin (Fd) to $NADP^+$ are transferred by which enzyme?
A. NADP Oxidase
B. NADP reductase
C. ATP synthase
D. Both A and B

Q.108 Molecular formula of chlorophyll a is?
A. $C_{55}H_{10}O_4N_6Mg$
B. $C_{55}H_{70}O_6N_5Mg$
C. $C_{55}H_{71}O_6N_4Mg$
D. $C_{55}H_{72}O_5N_4Mg$

Q.109 Wavelength of light that is mainly absorbed by the plants:
A. Orange
B. Red
C. Green
D. Both A and B

Q.110 The first action spectrum was obtained by:
A. T.W Engelmann
B. Malleus
C. TW Inws
D. W Stapes

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Q.111 First action spectrum was obtained by using:
A. Algae
B. Fungi
C. Bacteria
D. *Spirogyra*

Q.112 □□□□□□□□rganisms used _____ as a source of hydrogen.
A. Water
B. Hydrogen sulphide
C. Hydrogen cyanide
D. Hydrogen potassium permanganate

Q.113 Water insoluble photosynthetic pigment:
A. Chlorophyll a
B. Chlorophyll b
C. Carotenoids
D. All of these

Q.114 Photosynthesis is absent in:
A. Seaweeds
B. Mushrooms
C. Purple sulphur bacteria
D. Angiosperms

Q.115 What is the color of xanthophyll pigment?
A. Yellow
B. Red
C. Orange
D. Blue

Q.116 Chlorophyll b is found in which organism?
A. Green plants
B. Green algae
C. Animals
D. Both A and

Q.117 What do two peaks in action spectrum represent?
A. Light absorption
B. Consumption of carbon dioxide
C. Light emission
D. Both A and B

Q.118 These all are inorganic compounds except:
A. NO_2
B. $C_6H_{12}O_6$
C. H_2O
D. H_2SO4

Q.119 What is generated during noncyclic flow of photosynthesis?
A. ATP
B. NADPH
C. Oxygen
D. All of these

Q.120 Which is the correct order of energy transfer from accessory pigments to main photosynthetic pigment?
A. Carotenoids, Chlorophyll a, Chlorophyll b.
B. Chlorophyll b, Carotenoids, Chlorophyll a.
C. Carotenoids, Chlorophyll b, Chlorophyll a.
D. Chlorophyll a, Chlorophyll b, Carotenoids.

Q.121 What type of plant cells carry out photosynthesis?
A. Sclerenchymatous cells
B. Parenchymatous cells
C. Chlorenchymatous cells
D. Both B and C

Q.122 Which chemical reactions occur during the process of photosynthesis?
A. Oxidation
B. Reduction
C. Both A and B
D. None of these

Q.123 What is reduced during sugar production in photosynthesis?
A. NADH
B. DNA
C. Oxygen
D. None of these

Q.124 Photosynthesis is process in which _____ compounds of carbon and hydrogen are reduced to carbohydrate like (glucose) using light energy.
A. Organic
B. Energy poor
C. Energy rich
D. Reduced

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Q.125 Magnesium is important for the synthesis of which of the following?
A. Chlorophyll
B. Protein synthesis
C. Glucose metabolism
D. All of these

Q.126 Chlorophyll is insoluble in?
A. Carbon tetrachloride
B. Carbon chloride
C. Organic Solvents
D. None of these

Q.127 Van Neil's hypothesis about the production of oxygen during photosynthesis was based on the study and investigations on?
A. Bacteria
B. Algae
C. Protonema
D. Cyanobacteria

Q.128 Rate of photosynthesis does not depend upon:
A. Quality of light
B. Intensity of Light
C. Duration of Light
D. Temperature

Q.129 Quantitative study of energy relationships in biological systems obeys:
A. Bioenergetics
B. Laws of thermodynamics
C. Laws of thermochemistry
D. Laws of chemical energetic

Q.130 The graph that shows relative effectiveness of different wavelengths in photosynthesis is?
A. Actin spectrum
B. Action spectrum
C. Absorption spectrum
D. Emission spectrum

Q.131 The percentage of light absorbed by the leaf is:
A. 0.2
B. 0.15
C. 0.05
D. 0.01

Q.132 Which of the following statement about the head of a chlorophyll molecule is incorrect?
A. It is a porphyrin ring or tetrapyrrole ring structure
B. It is flat, square and light absorbing
C. Composed of carbon and nitrogen atoms with magnesium as central metal ion,
D. It is hydrophobic

Q.133 What does $NADPH_2$ provide during photosynthesis?
A. Energized electron
B. Uncharged electron
C. Energy
D. All of these

Q.134 Carotenoids perform protective function in which of the following organism?
A. Animal
B. Plants
C. Both A and B
D. None of these

Q.135 Chlorophyll molecule contains which of the following as a central metal ion?
A. Fe^{2+}
B. Zn^{2+}
C. Cu^{2+}
D. Mg^{2+}

Q.136 In all plants the major sites of photosynthesis are:
A. Leaf
B. Stems
C. Roots
D. Branches

Q.137 The organisms able to use sunlight directly as a source of energy are:
A. Plants
B. Animals
C. Fungi
D. Omnivores

Q.138 Which one is not an energy releasing process?
A. Glycolysis
B. Photosynthesis
C. Respiration
D. Krebs cycle

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Q.139 Which pair of areas within a chloroplast will show the steepest pH gradient between them?
A. DNA and stroma
B. Ribosome and stroma
C. Stroma and the space between the outer and inner membrane
D. Stroma and the thylakoid interior space

Q.140 Excretory products of autotrophic plants:
A. CO_2
B. O_2
C. H_2O
D. All of these

Q.141 Autotrophs live best in _____ environment:
A. Wet
B. Terrestrial
C. Organic
D. Inorganic

PRODUCTION OF ATP

Q.142 It is false about ATP:
A. It is a RNA nucleotide
B. It provides energy for cellular reactions
C. It is produced by endoplasmic reticulum
D. All of these

Q.143 Breaking of terminal phosphate of ATP releases about Kcal of energy?
A. 6.1
B. 6.3
C. 7.1
D. None of these

Q.144 Primary function of ATP is:
A. Act as catalyst
B. Allosteric modulation of enzymes
C. Energy source
D. To store energy

Q.145 One of the most important molecules found in living organisms is ATP. What is its major function?
A. Energy source of the cell
B. Coenzyme
C. Cofactor
D. Both A and B

Q.146 Which one is dollar of the cell?
A. ATP
B. DNA
C. Chromosome
D. Enzyme

ROLE OF LIGHT, WATER, CO_2/FACTORS AFFECTING PHOTOSYNTHESIS

Q.147 At which times there is no net gaseous exchange between leaves anal the atmosphere?
A. Day
B. Night
C. Dawn and Dusk
D. Midnight

Q.148 Which of the following is a compensation point?
A. Leaves respire and utilize O_2 and release CO
B. Photosynthesis and respiration occur at same rate. So there is not net exchange of gases between atmosphere and plants.
C. Rate of photosynthesis increases, so do the O_2 production, with a net release of oxygen coupled with the uptake of CO?
D. Rate of respiration becomes more than rate of photosynthesis. 16 Net yield of H_2O in Photosynthesis is

Q.149 Photosynthetic pigments are organized in form of?
A. Clusters
B. Stacks
C. Photosystems
D. Both a and b

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OUT OF SYLLABUS

Q.150 Evolution of pollen tube is parallel to the evolution of which of the following?

A. Leaf
B. Flower
C. Seed
D. Plant

Q.151 Which cells regulate the opening and closing of the stroma?

A. Neutrophil cells
B. Guard cells
C. Mesophyll cells
D. Basophil cells

ANSWER KEY

1	D	21	D	41	C	61	C	81	B	101	B	121	B	141	D
2	B	22	C	42	C	62	D	82	A	102	B	122	C	142	C
3	D	23	A	43	B	63	C	83	B	103	B	123	D	143	D
4	C	24	C	44	B	64	C	84	A	104	C	124	B	144	C
5	B	25	C	45	B	65	A	85	A	105	D	125	A	145	A
6	B	26	B	46	D	66	B	86	D	106	B	126	D	146	A
7	B	27	B	47	D	67	B	87	A	107	B	127	A	147	C
8	D	28	A	48	B	68	C	88	C	108	D	128	A	148	B
9	C	29	A	49	A	69	A	89	C	109	B	129	B	149	C
10	B	30	D	50	C	70	C	90	D	110	A	130	B	150	C
11	B	31	A	51	D	71	A	91	B	111	D	131	D	151	B
12	C	32	D	52	C	72	D	92	C	112	B	132	D		
13	D	33	D	53	B	73	C	93	C	113	D	133	A		
14	D	34	C	54	A	74	B	94	A	114	B	134	C		
15	B	35	A	55	A	75	D	95	B	115	A	135	D		
16	C	36	A	56	B	76	D	96	C	116	D	136	A		
17	B	37	C	57	A	77	C	97	C	117	B	137	A		
18	C	38	D	58	A	78	B	98	B	118	B	138	B		
19	A	39	D	59	D	79	B	99	A	119	D	139	D		
20	B	40	C	60	C	80	A	100	B	120	C	140	B		

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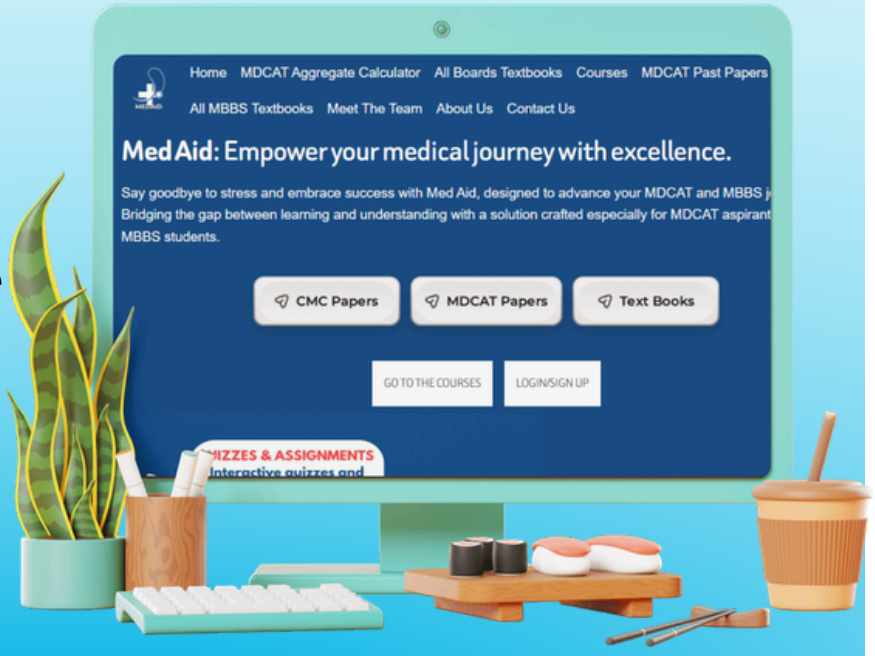

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3 TOPIC BIOLOGICAL MOLECULES

PRACTICE EXERCISE

INTRODUCTION TO BIOLOGICAL MOLECULES

Q.1 Which of the following is a trace element?
A. Hydrogen
B. Copper
C. Oxygen
D. Carbon

Q.2 In catabolic reaction _____ free the _____.
A. Fatty acids, polysaccharides
B. Proteins, amino acids
C. Lipids, glucose
D. None of these

Q.3 Which of the following is a chemical link between catabolism and anabolism?
A. AMP
B. ADP
C. ATP
D. All of these

Q.4 Which one is the basic element found in all organic compounds?
A. Oxygen
B. Carbon
C. Hydrogen
D. All of these

Q.5 Interconversion of carbohydrates, proteins and lipids in living cells are an example of:
A. Coordinated catabolic activities
B. Coordinated anabolic activities
C. Both A and B
D. None of these

Q.6 How are high energy phosphate bonds broken down in ATP?
A. Anabolism
B. Catabolism
C. Hydrolysis
D. All of these

Q.7 The branch of biology which deals with the study of chemical compounds and the chemical processes in the living organisms is called?
A. Chemistry
B. Molecular Biology
C. Biochemistry
D. Both a and b

Q.8 Reactions in which simple substances are combined to form complex substances are called?
A. Metabolic reactions
B. Catabolic reactions
C. Anabolic reactions
D. Both B and C

WATER

Q.9 Specific heat of vaporization of water is:
A. 774 Kcal/kg
B. 874 Kcal/kg
C. 574 Kcal/kg
D. 674 Kcal/kg

Q.10 What percentage of water is found in brain cells?
A. 50
B. 80
C. 85
D. 90

Q.11 The attraction between water molecules and cell wall of xylem is termed as:
A. Cohesion
B. Tension
C. Adhesion
D. Imbibition

Q.12 In living organisms, the lubricant which provides protection against damage resulting from friction is?
A. Water
B. Carbohydrates
C. Lipids
D. Proteins

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Q.13 The number of calories required to raise the temperature of lg of water from 15 to 16 °C is called?
A. Specific Heat of Vaporization
B. Specific heat capacity
C. Caloric heat
D. Both a and b

Q.14 Liposomes are:
A. Drug carriers
B. Water in middle
C. Sac of phospholipids
D. ALL A, B, C

CARBOHYDRATES

Q.15 Glycogen is an example of:
A. Phospholipid
B. Polysaccharides
C. Carbohydrates
D. Both B and C

Q.16 What percentage of glucose is normally found in human blood?
A. 0.008
B. 0.0008
C. 0.018
D. 0.08

Q.17 The covalent bond between two monosaccharide subunits is called?
A. Phosphodiester bond
B. Peptide bond
C. Ionic bond
D. Glycosidic bond

Q.18 Which of following cannot be hydrolyzed?
A. Polysaccharides
B. Monosaccharides
C. Oligosaccharides
D. Sucrose

Q.19 Animal starch is called:
A. Cellulose
B. Agar
C. Glycogen
D. Chitin

Q.20 It is not a monosaccharide:
A. Fructose
B. Glucose
C. Sucrose
D. All are monosaccharides

Q.21 Sucrose is present in:
A. Sugar cane
B. Milk
C. Almonds
D. None

Q.22 It is _____ is valuable for diabetic control.
A. Green vegetable
B. Grapes
C. Rice
D. All of these

Q.23 Glycogen is most abundantly present in:
A. Liver
B. Muscles
C. Kidneys
D. Both A and B

Q.24 Which of the following is soluble in hot water?
A. Starch
B. Glycogen
C. Amylose
D. Amylopectin

Q.25 Glucose is also called as:
A. Dextrose
B. Lymph sugar
C. Grape sugar
D. None

Q.26 Glycosidic bond is present between:
A. Monosaccharides
B. Carbon atoms
C. Amino acids
D. Fatty acids

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Q.27 Which of the following is a trisaccharide?
A. Mannose
B. Galactose
C. Maltose
D. Raffinose

Q.28 Glycogen on hydrolysis gives:
A. Glucose
B. Galactose
C. Fructose
D. Ribose

Q.29 Cellulose on hydrolysis yields:
A. α D-Glucose
B. α L-Glucose
C. β D-Glucose
D. β L-Glucose

Q.30 Carbohydrate catabolism is concerned with the fate of:
A. ATP
B. Amino acid
C. Glucose
D. All of these

Q.31 A complex substance which on hydrolysis yields polyhydroxy aldehyde or ketone subunits is called?
A. Lipid
B. Carbohydrate
C. Protein
D. All of these

Q.32 Which one gives blue color?
A. Starch
B. Glycogen
C. Cellulose
D. None of these

Q.33 To synthesis 10g of glucose, how much energy is essentially required?
A. 727 Kcal
B. 712 Kcal
C. 717 Kcal
D. 719 Kcal

Q.34 Glycogen is present in all body except
A. Brain
B. Heart
C. Blood
D. Tissues

Q.35 Alpha 1-4 glycosidic linkage is present in:
A. Maltose
B. Sucrose
C. Cellulose
D. Cellobiose

Q.36 The 5 carbon sugar present in the heart muscle is:
A. Lyxose
B. Ribose
C. Xylose
D. Glucose

Q.37 Which is true regarding open chain structure of glucose?
A. There are six asymmetric carbons
B. There are five asymmetric carbons
C. There are four asymmetric carbon
D. There are three asymmetric carbon

Q.38 Rarely occurring monosaccharides observed in some bacteria is?
A. Tetroses
B. Hexoses
C. Pentoses
D. Trioses

Q.39 In the molecular formula Cx(H2O)y, the value of x ranges from?
A. 1000
B. 2000
C. 3 to 7000
D. 3000 and more

Q.40 How many monosaccharide units do oligosaccharides yield upon hydrolysis?
A. 2
B.5
C. 10
D. All of these

Q.41 Which one of the following biomolecules is most abundant in animals?
A. Starch
B. Cellulose
C. Glycogen
D. All of these

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Q.42 This is non-reducing sugar:
A. Maltose
B. Sucrose
C. Cellobiose
D. Lactose

Q.43 What type of atom is carbon atom?
A. Divalent
B. Monovalent
C. Trivalent
D. Tetravalent

Q.44 Which bond provides stability to complex carbohydrate molecule?
A. C—H
B. C—N
C. C—O
D. C—C

Q.45 Which of the following constitute large organic molecules?
A. Cellulose
B. Glucose
C. Amino acids
D. All of these

Q.46 These are crystalline, water soluble, forming pyranose rings
A. Monosaccharides
B. Polysaccharides
C. Oligosaccharides
D. Disaccharides

Q.47 When the glucose level in blood comes down, glucose is synthesized from _____.
A. Fats
B. Glycogen
C. Amino acids
D. DNA

Q.48 Which are the most physiologically significant disaccharides?
A. Maltose
B. Sucrose
C. Lactose
D. All of these

Q.49 Which of the following is the most complex sugar?
A. Monosaccharides
B. Oligosaccharides
C. Polysaccharides
D. Carbohydrates

Q.50 $(CH_2O)n$ is a general formula of:
A. Monosaccharides
B. Oligosaccharides
C. Polysaccharides
D. Carbohydrates

Q.51 The functional group that best represents ketoses is?
A. CO
B. COOH
C. HCOH
D. HOH

Q.52 Unit of carbohydrate is:
A. Monosaccharides
B. Amino acids
C. Fatty acids
D. All

Q.53 Glycogen is present in all body except:
A. Brain
B. Tissues
C. Heart
D. Blood

Q.54 The smallest monosaccharide is:
A. Triose
B. Pentose
C. Tetrose
D. None of these

Q.55 Ribose is a monosaccharide constituent of many_____.
A. Enzymes
B. Coenzymes
C. Vitamins
D. Antibiotic

PROTEINS

Q.56 This amino acid not found in proteins is
A. Beta alanine
B. Glutamine
C. Tyrosine
D. Histidine

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Q.57 The high content of which amino acid confers resistance, stability and insolubility to hairs, nails and skin:
A. Glycine
B. Alanine
C. Methionine
D. Cysteine

Q.58 Which structure of protein gives information about the folding of a protein?
A. Primary structure
B. Tertiary structure
C. Secondary structure
D. Quaternary structure

Q.59 The protein contains bonds:
A. Inorganic bonds
B. Peptide bonds
C. Glycosidic bonds
D. Covalent bonds

Q.60 Protein constitutes of what percentage of the total dry weight found in cells?
A. 50
B. 55
C. 40
D. 65

Q.61 Which structural organization is most common in globular proteins?
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.62 An enzyme containing 2 chains of polypeptide has:
A. Primary structure
B. Primary and secondary structure
C. Primary, secondary, tertiary and quaternary structure
D. It has all structures

Q.63 Word Protein is derived from:
A. Latin
B. Greek
C. Roman
D. English

Q.64 Keratinized epithelium is present in:
A. Hair
B. Skin
C. Bone
D. Muscle

Q.65 Which of the molecules is formed by peptide bond?
A. Ammonia
B. Iron
C. Water
D. None of the above

Q.66 Which of the following is not an amino acid?
A. Histidine
B. Lactic acid
C. Glutamic acid
D. Glycine

Q.67 What are the distinguishing features of fibrous proteins?
A. Elastic
B. Non-crystalline
C. Disorganized
D. Both A and B

Q.68 Avidin is a protein that:
A. Binds egg white with biotin
B. Binds egg white with egg albumin
C. Both A and B
D. This protein do not belong to egg white

Q.69 The molecular basis of sickle cell anemia was found by:
A. F. Sanger
B. Beadle
C. Tatum
D. Ingram

Q.70 What are the main distinguishing features of globular proteins?
A. Crystalline
B. Elastic
C. Functional
D. Both A and C

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Q.71 Antibodies play important role against microorganisms and other pathogens to which type of proteins do they belong?
A. Globular
B. Functional
C. Fibrous
D. Both A and B

Q.72 Proteins are the polymers of?
A. Amino acids
B. Fatty acids
C. Nucleotides
D. None of these

Q.73 What type of protein is Fibrin?
A. Functional
B. Structural
C. Enzymatic
D. All of these

Q.74 The total number of amino acids that have been found in tissues and cells are?
A. 250
B. 200
C. 20
D. 170

Q.75 What are the distinguishing features of fibrous proteins?
A. Non-crystalline
B. Elastic
C. Disorganized
D. Both A and B

Q.76 An insulin molecule is made up of how many polypeptide chains?
A. 1
B. 2
C. 3
D. 4

Q.77 It is protein in nature:
A. Fats /cholesterol
B. ATP
C. Glycogen
D. Ligase

Q.78 In glycine, R group of amino acids is replaced by?
A. COOH
B. CH2
C. CH2
D. None of these

Q.79 What type of bonding in proteins maintains the integrity of the helical secondary structure?
A. Hydrogen bonds
B. Ionic bonds
C. Disulfide linkages
D. Both A and B

Q.80 How many bond/s are in a dipeptide?
A. 1
B. 3
C. 2
D. 4

Q.81 Vegetative source of protein:
A. Egg
B. Soyabean
C. Pulses
D. Both B and C

Q.82 Which structure of protein gives information about number and sequence of amino acids?
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.83 Globular structure of protein is due to:
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.84 Most abundant protein in blood:
A. Collagen
B. Hemoglobin
C. Actin
D. Rubisco

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Q.85 Abundant protein in human body:
A. Rubisco
B. Collagen
C. Cellulose
D. Albumin

Q.86 Coagulated protein is:
A. Insoluble
B. Non folded
C. Nonfunctional
D. All of above

Q.87 How many types of amino acids form proteins in human body?
A. 25
B. 70
C. 20
D. 400

Q.88 Proteins are polymers of:
A. Amino acids
B. Fatty acids
C. Nucleotides
D. None of these

Q.89 Number of essential amino acids is?
A. 10
B. 20
C. 9
D. 110

Q.90 Which of the following is important secondary structure in proteins?
A. α-helix
B. β-pleated sheet
C. β-pleated sheet parallel
D. Both A and B

Q.91 Enzymes that are integral part of ribosomes are involved in the synthesis of which of the following molecules?
A. Lipids
B. Protein
C. Carbohydrates
D. All of these

LIPIDS

Q.92 A fatty acid is composed of _____.
A. Acid group at one end
B. Acid groups at both ends
C. Amino group at one end
D. Amino group at both ends

Q.93 A compound produced as a result of a chemical reaction of an alcohol with an acid in which water molecule is released is called?
A. Monosaccharide
B. Fatty acid
C. Nucleic acid
D. Neutral lipid

Q.94 Serine is a component of:
A. Lipid
B. Haemoglobin
C. Phospholipid
D. Waxes

Q.95 Choline is component of:
A. Phospholipids
B. Phosphatidic acid
C. Terpenoids
D. Waxes

Q.96 Sterols are:
A. Lipid
B. Protein
C. Carbohydrates
D. All of these

Q.97 Steroid are naturally:
A. Lipoproteins
B. Proteins
C. Lipids
D. A and B

Q.98 These are properties of lipids:
A. Insoluble in water and soluble in fat solvent.
B. High energy content
C. Structural component of cell membrane
D. All of these

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Q.99 Fatty acids containing 18 C atoms and a single double bond are?
A. Saturated
B. Unsaturated
C. Oleic acid
D. Palmitic acid

Q.100 Which of the following is a phospholipid?
A. Sterol
B. Cholesterol
C. Lecithin
D. Steroid

Q.101 Lipids show solubility in which of the following solvents?
A. Water
B. Ether
C. Inorganic solvents
D. All solvents

Q.102 Lipids have great functional significance in the human body. What are the main functions of the lipids?
A. Energy source
B. Structure of membrane
C. Mechanical protection
D. All of these

Q.103 Lecithin contains _____.
A. Ethanolamine
B. Choline
C. Serine
D. Betaine

Q.104 Hydrophilic substances are _____ and hydrophobic substances are _____.
A. Water loving, Water fearing
B. Polar, Non-polar
C. Soluble in water, Soluble in lipid
D. All are correct

Q.105 A triglyceride is:
A. Protein
B. Nucleic acid
C. A simple sugar
D. Lipid

Q.106 Nitrogenous bases such as choline and serine are significant part of which of the following?
A. Sphingolipids
B. Phospholipids
C. Phosphodiester
D. none of these

Q.107 Saponification number describes_____.
A. Unsaturation in fat
B. Average molecular weight of fatty acid
C. Acetyl number
D. Acid number

Q.108 Lipids show solubility in which of the following solvents?
A. Water
B. Ether
C. Inorganic solvents
D. All solvents

Q.109 Essential fatty acids show all the characters except_____.
A. Lipotropism
B. Blood clotting factors
C. Used for energy production
D. None of these

Q.110 Fatty acid contains:
A. Alcohol and esters
B. Carboxylic and alkyl groups
C. Carboxylic group and isoprenoid
D. Phospholipids and alkyl groups

Q.111 In water, hydrophobic interactions of phospholipids are:
A. In heads
B. In tails
C. Both A and B
D. None

Q.112 Liposomes are:
A. Vesicles
B. Have water
C. Drug carrier
D. All of the above

Q.113 Glycerol is component of:
A. Fatty acids
B. Acylglycerols
C. Phospholipids
D. Both B and C

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Q.114 Oils are:
A. Saturated fatty acids
B. Unsaturated fatty acids
C. Glycerides with unsaturated fatty acids
D. Glycerides with saturated fatty acids

RNA

Q.115 In contrast to eukaryotic mRNA, prokaryotic mRNA:
A. Can be polycistronic
B. Is synthesized with introns
C. Can only be monocistronic
D. Has a poly A tail

Q.116 A sample of RNA is sequenced and found to contain 22% adenine. Which of the following conclusions can also be drawn about the sample?
A. 22% uracil
B. 22% thymine
C. 22% cytosine
D. 22% guanine

Q.117 For a protein molecule of 2000 amino acids, the mRNA will have a length of how many nucleotides?
A. 3000
B. 2000
C. 6000
D. 5000

Q.118 Most abundant intracellular free nucleotide is:
A. UTP
B. FAD
C. NAD
D. ATP

Q.119 RNA does not contain:
A. Adenine
B. Hydroxy methyl cytosine
C. Phosphate
D. Thymine

CONJUGATED MOLECULES (GLYCOLIPIDS, GLYCOPROTEINS)

Q.120 Lipoproteins rich in cholesterol are:
A. Chylomicrons
B. VLDL
C. LDL
D. HDL

Q.121 HDL is synthesized in:
A. Adipose tissue
B. Liver
C. Intestine
D. Liver and intestine

Q.122 Which of the following statement is not true for compounds like glycoprotein and glycolipids?
A. They are conjugated molecules of carbohydrates
B. Both have role in the extracellular matrix of animals
C. They are components of biological membranes.
D. Both are produced and secreted by endoplasmic reticulum

Q.123 The basic framework structure of all types of membranes are:
A. Glycolipids
B. Glycoproteins
C. Lipoproteins
D. Nucleoproteins

Q.124 Glycosphingolipid are made up of
A. Sphingolipids
B. Alcohol and fatty acids
C. Carbohydrate and sphingolipids
D. Carbohydrates and fatty acids

OUT OF SYLLABUS

Q.125 The oldest mineral discovered so far is which of the following, which dates back to 4.4 billion years:
A. Iron
B. Cadmium
C. Diamond
D. Zircon

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PMC Topic-3

Q.126 Which of the following makes protective coatings around the plant organs
A. Lipids
B. Waxes
C. Glycerols
D. Glycolipids

Q.127 Which of the following is a water-soluble vitamin?
A. Riboflavin
B. Vitamin c
C. Niacin1
D. All of these

Q.128 In DNA molecules, Adenine pairs with which of the following nucleic acid bases?
A. Guanine
B. Thymine
C. Cytosine
D. Uracil

Q.129 Nontoxic vitamins include which of the following?
A. Vitamin c
B. Vitamin b
C. Both A and B
D. None of the above

Q.130 Reactions in which simple substances are combined to form complex substances are called:
A. Metabolic reactions
B. Catabolic reactions
C. Anabolic reactions
D. None of these

Q.131 Which of the following is water soluble vitamin?
A. A
B. B
C. D
D. K

Q.132 The number of water-soluble vitamins is:
A. 3
B. 6
C. 9
D. 12

ANSWER KEY

1	B	21	A	41	C	61	C	81	D	101	D	121	A
2	B	22	A	42	B	62	C	82	A	102	D	122	D
3	C	23	D	43	D	63	B	83	C	103	B	123	C
4	D	24	C	44	C	64	B	84	B	104	D	124	C
5	C	25	A	45	A	65	D	85	B	105	D	125	D
6	C	26	A	46	A	66	B	86	D	106	B	126	B
7	C	27	D	47	B	67	D	87	C	107	D	127	D
8	C	28	A	48	D	68	A	88	A	108	B	128	B
9	C	29	C	49	C	69	D	89	C	109	B	129	C
10	C	30	C	50	A	70	D	90	D	110	B	130	C
11	C	31	B	51	A	71	D	91	B	111	B	131	B
12	A	32	A	52	A	72	A	92	A	112	D	132	D
13	B	33	C	53	D	73	B	93	D	113	D		
14	D	34	C	54	A	74	D	94	C	114	B		
15	B	35	A	55	B	75	D	95	A	115	A		
16	D	36	A	56	A	76	B	96	A	116	A		
17	D	37	C	57	D	77	D	97	C	117	C		
18	B	38	A	58	B	78	D	98	D	118	D		
19	C	39	C	59	B	79	A	99	C	119	D		
20	C	40	D	60	A	80	A	100	C	120	C		

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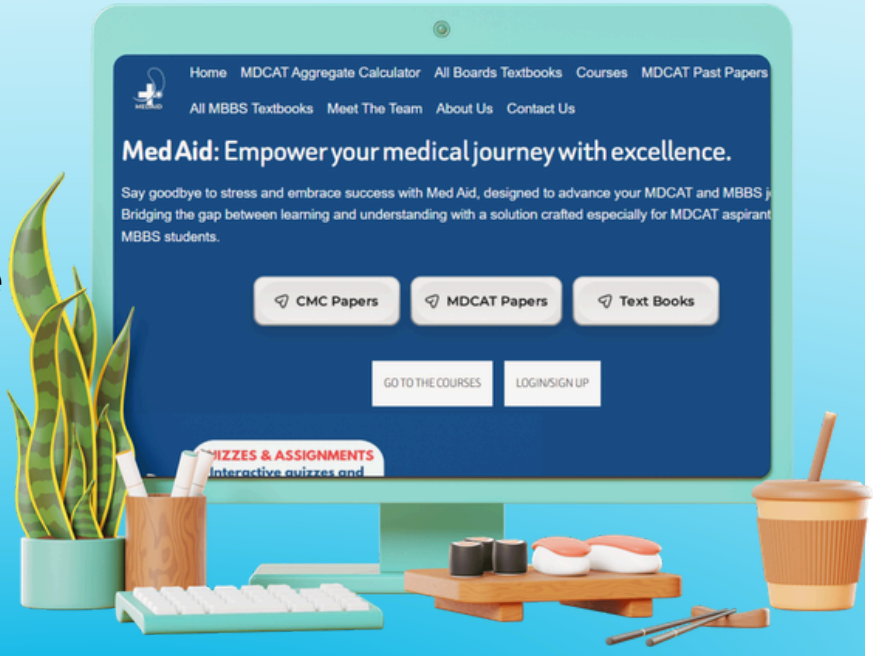

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4 CELL STRUCTURE AND FUNCTION

TOPIC PRACTICE EXERCISE

CELL WALL

Q.1 Cellulose is the major component of?
A. Primary wall
B. Secondary wall
C. Middle lamella
D. All of these

Q.2 The outermost layer in a typical plant cell would be_____.
A. Primary cell wall
B. Secondary cell wall
C. Middle lamellae
D. Cell surface membrane

Q.3 A plant cell wall is mainly composed of which of the following?
A. Protein
B. Starch
C. Cellulose
D. Lipid

Q.4 The first layer of cell wall which is formed is called?
A. Primary wall
B. Secondary wall
C. Middle lamella
D. All of these

Q.5 Secondary cell wall of sclerenchyma cells is impregnated with?
A. Cellulose
B. Lignin
C. Murein
D. Pectin

Q.6 The cementing material between adjacent plant cells.
A. Cellulose
B. Hemicellulose
C. Middle lamella
D. All of the above

Q.7 Which of the following is non-living component of plant cell?
A. Nucleus
B. Cell wall
C. Cell membrane
D. All of these

Q.8 Cell wall of fungi contains:
A. Cellulose
B. Chitin
C. Peptidoglycan
D. Glycogen

Q.9 Components of secondary cell wall:
A. Cellulose, hemicellulose, pectin
B. Cellulose, hemicellulose, lignin
C. Cellulose only
D. Magnesium and calcium salts and pectin

Q.10 Cell wall is secreted by:
A. Cell membrane
B. Vacuole
C. Cytoplasm
D. Protoplast

Q.11 A cell without cell wall is termed as:
A. Tonoplast
B. Protoplast
C. Symplast
D. Epiblast

Q.12 Rectangular shape of plant cells in due to:
A. Cell wall
B. Cell membrane
C. Vacuole
D. Cytoskeleton

Q.13 Which has high affinity for water?
A. Lignin
B. Cellulose
C. All of them
D. None of these

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PMC Topic-4

CYTOPLASM AND CELL ORGANELLES

Q.14 Ribosomes combined with mRNA are called?
A. Lysosome
B. Nucleosome
C. Polysome
D. Polysomic

Q.15 Ribonucleoprotein particle are the name of?
A. RNA
B. DNA
C. Nucleus
D. Eukaryotic ribosomes

Q.16 If 3 ribosomes attach to single mRNA at different points then how many similar proteins will form?
A. 1
B. 2
C. 3
D. No similar protein

Q.17 What is the approximate ratio of RNA and protein in a ribosome?
A. 1:1
B. 2:1
C. 1:2
D. 1:3

Q.18 Ribosomes are chemically composed of which of the following?
A. Protein
B. DNA
C. RNA
D. Both A and C

Q.19 It helps in attachment of two ribosomal units:
A. Calcium ions
B. Magnesium ions
C. Chloride ions
D. Sodium ions

Q.20 Which of the following organelles is not bound by a membrane?
A. Ribosomes
B. ER
C. Mitochondria
D. Nucleus

Q.21 60S and 40S subunit combine to form what size particle?
A. 80S
B. 90S
C. 100S
D. 110S

Q.22 Which of the following is synthesized by free floating ribosomes of cytoplasm in humans?
A. DNA polymerase
B. Salivary amylase
C. Pancreatic amylase
D. Salivary lipase

Q.23 The soluble part of the cytoplasm is known as?
A. Cytosol
B. Polysomes
C. Cisternae
D. Chitin

Q.24 Enzymes that are integral part of ribosomes are involved in the synthesis of which of the following molecules?
A. Lipids
B. Proteins
C. Carbohydrates
D. All of these

NUCLEUS

Q.25 _____ is the heaviest particulate of the cell.
A. Golgi apparatus
B. Cytoplasm
C. Mitochondria
D. Nucleus

Q.26 Which of the following cells do not possess a nucleus?
A. Sieve tube cells
B. Bacteria
C. Red blood cells
D. All of the above

Q.27 An animal has 80 chromosomes in its gametes, how many chromosomes will be seen in the animal's muscle cells?
A. 120
B. 240
C. 40
D. 160

Q.28 The number of nuclear pores is highly variable in eukaryotic cells because of?
A. Cell size
B. Number of chromosomes Level of gene expression
C. Size of the nucleus
D. Maturation

Q.29 Which statement about the nucleolus is not true?
A. No membranous boundary
B. Composed of two regions
C. Site of synthesis for rRNA
D. Hereditary centre

Q.30 If an organism has a diploid number of 36, what is its haploid number?
A. 12
B. 9
C. 18
D. 22

Q.31 The 23rd pair of chromosomes in man is:
A. Polymorphic
B. Heteromorphic
C. Homomorphic
D. Automorphic

Q.32 Which of the following cell structure contains the highest concentration of RNA?
A. Centriole
B. Mitochondria
C. Nucleolus
D. Nucleus

Q.33 All chromosomes other than sex chromosomes are called:
A. Autosomes
B. Allosomes
C. Microsomes
D. None of them

Q.34 Somatic cells of humans have how many pairs of chromosomes in total?
A. 10
B. 23
C. 24
D. 48

Q.35 _____ is responsible for making ribosomal RNS (rRNA)
A. Nucleus only
B. Nucleus & nucleolus only
C. Nucleolus only
D. None of above

Q.36 The soluble sap of the nucleus in a plant cell is called?
A. Cytoplasm
B. Protoplasm
C. Nucleoplasm
D. Protoplast

Q.37 Factory of ribosomal synthesis is?
A. Cytoplasm
B. Nucleus
C. Nucleolus
D. Endoplasmic reticulum

Q.38 Double membranous organelle having pores:
A. Chloroplast
B. Mitochondria
C. Nucleus
D. Cell membrane

ENDOPLASMIC RETICULUM

Q.39 Which of the following is not a function of Smooth Endoplasmic Reticulum (SER)?
A. Synthesis of steroid hormones from cholesterol.
B. Detoxification of harmful drugs.
C. Synthesis of phospholipids for plasma membrane.
D. Synthesis of membrane proteins

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Q.40 Which of the following is a mesh of interconnected membranes involved in protein synthesis and transport?
A. ER
B. Cytoskeleton
C. Golgi apparatus
D. All of these

Q.41 Which of the following is false about the sarcoplasmic reticulum?
A. The sarcoplasmic reticulum is a specialized smooth endoplasmic reticulum
B. The sarcoplasmic reticulum releases calcium ions into the cytoplasm of the muscle cell
C. A change in membrane potential causes the sarcoplasmic reticulum to become more permeable to calcium ions
D. The sarcoplasmic reticulum is found only in voluntary muscle cells

Q.42 Cytoplasmic streaming movement causes flow of all of the following except?
A. Glucose and salts
B. Mitochondria
C. Golgi
D. RER

Q.43 Which one of the following is involved in lipid metabolism?
A. RER
B. Golgi apparatus
C. Chloroplast
D. None

Q.44 Sarcoplasm is different form cytoplasm:
A. It contains sarcoplasmic reticulum
B. It contains glycogen
C. It contains glycogen and oxygen binding protein, myoglobin
D. All of these

Q.45 _____ are storage bodies for intracellular calcium.
A. RER
B. SER
C. Vacuoles
D. Golgi complex

Q.46 Smooth endoplasmic reticulum is not involved in:
A. Hormone secretion
B. Detoxification
C. Conversion of mRNA to amino acids
D. Lipoproteins and glycoproteins formation

Q.47 Which of the following is not the function of endoplasmic reticulum?
A. Transport of material
B. Mechanical support
C. Synthesis of conjugated molecules
D. All of theses

Q.48 Function of Smooth Endoplasmic Reticulum (SER) is_____.
A. Synthesis of intracellular proteins.
B. Synthesis of lipids.
C. Synthesis of extracellular enzymes.
D. Synthesis of extracellular proteins

Q.49 Spherical or tubular membranes which separate the material present in endoplasmic reticulum from that of cytoplasmic material are called?
A. Cytosol
B. Cisternae
C. Lysosomes
D. Cristae

Q.50 Which of the following is not the function of endoplasmic reticulum?
A. Transport of material
B. Mechanical support
C. Synthesis of conjugated molecules
D. All of these

Q.51 Network of tubules continuous with nuclear membrane:
A. RER
B. SER
C. Both A and B
D. None

Q.52 If a radioactive amino acid is given to an organism, the organelle that shows radioactivity very first time:
A. Golgi complex
B. Mitochondria
C. Nucleus

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Q.53 Sarcoplasmic reticulum cells are those cells that contain:
A. SER less
B. SER more
C. RER less
D. RER more

Q.54 _____ extend from nucleus and touch cell membrane.
A. SER
B. RER
C. Gogli apparatus
D. Both A and B

Q.55 It is not found in composition of ER:
A. Carbohydrates
B. Lipids
C. Proteins
D. DNA

Q.56 Which of the following is not a function of SER?
A. Synthesis of steroid hormones of cholesterol
B. Detoxification of harmful drugs
C. Synthesis of phospholipids for plasma membrane
D. Synthesis of membrane proteins

MITOCHONDRIA

Q.57 ADP is regenerated by mitochondria into which of the following?
A. AMP
B. ATP
C. ADP
D. All of these

Q.58 Which of the following is not present in mitochondria?
A. Enzymes
B. Coenzymes
C. Ribosomes
D. Thylakoid

Q.59 The outer and inner membranes of mitochondria are?
A. Structurally and functionally different
B. Structurally different but functionally similar
C. Structurally and functionally similar
D. Structurally similar but functionally different

Q.60 Which of the following is not a character of mitochondria?
A. It contains F 1 particles
B. It is double membranous
C. is a self-replicating organelle
D. Number of mitochondria is constant

Q.61 Inner membrane convulsions of the mitochondria are called?
A. Grana
B. Cnstae
C. Thylakoid membrane
D. Intergrana

Q.62 Diameter of mitochondria ranges between:
A. 0.5-1 μm
B. 0.5-1 nm
C. 100-200 μm
D. 100-200 nm

Q.63 It is a true statement:
A. A lot of mitochondria are present in axons
B. Less number of mitochondria are present in axons
C. A lot of mitochondria are present in dendrites
D. A lot of mitochondria are present in dendron

Q.64 Enzymes in mitochondrial matrix help in which of the following metabolic processes?
A. Krebs cycle
B. Aerobic respiration
C. Fatty acid metabolism
D. ALL A, B, C

Q.65 _____ plays role in respiration.
A. Mitochondria
B. Chloroplast
C. Ribosome
D. Golgi apparatus

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Q.66 Which of the following combination is an example of self-replicating organelles?
A. Mitochondria and Ribosomes
B. Mitochondria and Chloroplast
C. Mitochondria and Vacuole
D. Mitochondria and Nucleus

Q.67 Which of the following is double membranous organelle?
A. Nucleus
B. Mitochondria
C. Chloroplast
D. All A, B, C

Q.68 F_1 particles are present in:
A. Chloroplast
B. Mitochondria
C. Ribosome
D. All of these

GOLGI APPARATUS/GOLGI COMPLEX/GOLGI BODIES

Q.69 Golgi complex was discovered by which scientist?
A. Robert Brown
B. Camillo Golgi
C. De Duve
D. Robert Hooke

Q.70 Proteins and lipids are converted into glycolipids and glycoproteins by adding carbohydrates by?
A. Ribosomes
B. Cytoplasm
C. Golgi apparatus
D. Endoplasmic reticulum

Q.71 Golgi complex is responsible for the formation of secretory granules in _____cell.
A. Stomach
B. Liver
C. Pancreatic
D. Muscle

Q.72 Pancreas produces secretory granules that help in digestion. These granules after passing through endoplasmic reticulum are pinched off from the surface of Golgi apparatus?
A. Forming phase
B. Maturing phase
C. Any of these
D. None of these

Q.73 Shape of the maturing phase of the Golgi apparatus is?
A. Biconcave
B. Convex
C. Spherical
D. Concave

Q.74 Which organelle form cell membrane?
A. Cell wall
B. SER
C. RER
D. Golgi body

Q.75 Which is incorrectly matched:
A. Golgi apparatus – intercellular digestion
B. Cell membrane – cell recognition
C. SER – Carbohydrate metabolism
D. RER – protein synthesis

LYSOSOMES

Q.76 What are Autophagosomes?
A. Those lysosomes which eat parts of their own cells to generate energy.
B. Those lysosomes which eat old and worn-out cellular organelles.
C. Lysosomes which help in extracellular digestion
D. Both A and B

Lysosomes are known as "suicidal bags" because of?
A. Parasitic activity
B. Presence of food vacuoles
C. Hydrolytic activity
D. Catalytic activity

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Q.78 Which of the following cell organelle does not contain DNA?
A. Nucleus
B. Mitochondria
C. Lysosomes
D. Chloroplast

Q.79 The process of self-digestion of selective nonfunctional organelle by cells through the actions of enzymes originating from the cell is called?
A. Pinocytosis
B. Endocytosis
C. Autophagy
D. Cytotoxicity

Q.80 Phagocytosis, autophagy and extracellular digestion are the functions of?
A. Lysosomes
B. Mitochondria
C. Golgi apparatus
D. All of these

Q.81 A disease caused by the absence of a lysosomal enzyme responsible for lipid catabolism:
A. Tay-Sach's disease
B. Phenylketonuria
C. Klinefelter's syndrome
D. Down's syndrome

Q.82 The cells which lack lysosomes would have difficulty in which of the following?
A. Digesting food
B. Moving cytoplasm
C. Protein packaging
D. Storage of energy

Q.83 Lysosomes are formed by:
A. RER
B. SER
C. Golgi complex
D. Mitochondria

PLASTIDS/CHLOROPLASTS

Q.84 The type of plastids found in roots of plants:
A. Chloroplasts
B. Chromoplasts
C. Leucoplasts
D. All of them

Q.85 In the plants, 50 or more thylakoids piled upon each other to form?
A. Granum
B. Centrosome
C. Stroma
D. Multinucleate

Q.86 The dense fluid filled region in the chloroplast is called?
A. Grana
B. Stroma
C. Thylakoid
D. Intergrana

Q.87 Enzymes in Calvin cycle are found in which cell organelle?
A. Smooth endoplasmic reticulum
B. Chloroplast
C. Mitochondrion
D. Golgi complex

Q.88 Which type of cell would be the most appropriate for the study of chloroplasts?
A. Conducting cell
B. Pericycle cell
C. Photosynthetic cell
D. All of these

Q.89 Stacked of thylakoids in chloroplasts is called?
A. Grana
B. Stroma
C. Nucleus
D. None of these

Q.90 Which of the following organelle is involved in the release of oxygen?
A. Mitochondria
B. Chloroplast
C. Ribosomes
D. Both A and B

Q.91 The matrix surrounding the grana in the inner membrane of the chloroplast is called?
A. Cytosol
B. Frets
C. Stroma
D. Intergranal lamellae

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Q.92 Plants store food in:
A. Chloroplast
B. Chromoplasts
C. Leucoplast
D. Both A and B

Q.93 Double membranous structure having coins like stacks of membranes are known as:
A. Mitochondria
B. Nucleus
C. Chloroplast
D. Golgi apparatus

Q.94 Yellowing and brown end of leaf is because of deficiency of:
A. Chlorophyll
B. Nitrogen
C. Potassium
D. Iron

Q.95 Colour of petals is due to:
A. Chloroplast
B. Plastid
C. Chromoplast
D. Leucoplast

Q.96 Enzymes for light dependent reaction are present in:
A. Thylakoid membrane of chloroplast
B. Lumen of grana
C. Stroma
D. Outer membrane

VACUOLES

Q.97 The membrane around the vacuole Is known as?
A. Tonoplast
B. Elaioplast
C. Cytoplast
D. Amyloplast

Q.98 The largest organelle in a mature living plant cell is?
A. Chloroplast
B. Nucleus
C. Central vacuole
D. Mitochondria

Q.99 Which of the following organelles are found in both plant and animal cells?
A. Vacuole
B. Peroxisomes
C. Cell wall
D. None of these

Q.100 Under microscopic examination, which cellular structure would differentiate a plant cell from an animal cell?
A. Ribosomes
B. Cell membrane
C. Cytoplasm
D. Cell vacuole

Q.101 Which one of the following is not double membranous structure?
A. Vacuole
B. Mitochondria
C. Chloroplast
D. Nucleus

PROKARYOTE AND EUKARYOTE

Q.102 Which combination of organelles is usually present in both animal and plant cells?
A. Golgi complex, plastids, mitochondria
B. Plastids, mitochondria, endoplasmic reticulum
C. Golgi complex, endoplasmic reticulum, centrioles
D. Mitochondria, endoplasmic reticulum, ribosomes

Q.103 Unlike eukaryotes, prokaryotes have no membrane-bound organelles. How, then, are prokaryotes able to generate energy?
A. Prokaryotes do not generate energy
A. Prokaryotes produce energy via photosynthesis
B. Prokaryotes have specialized mitochondria
D. Prokaryotes generate proton gradients across their plasma membranes

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Q.104 Which statement describes an incorrect difference between a plant cell and bacterial cell?
A. Bacterial cell has 70S ribosomes whereas a plant cell has 80S ribosomes.
B. Bacterial cell divides by binary fission whereas a plant cell divides by mitosis.
C. Bacterial cells do not have a nuclear membrane whereas plant cells have.
D. None of the above

Q.105 Which of the following components of an animal cell is not observed in a bacterial cell?
A. Nucleus
B. Ribosomes
C. Cell membrane
D. DNA

Q.106 Eukaryotes can share which of the following structures with prokaryotes?
A. Cell wall
B. Golgi
C. Mitochondria
D. Nucleoid

Q.107 The presence of which of the following feature would best indicate a eukaryotic cell?
A. Cilia
B. Plasma membrane
C. Organelles
D. Ribosomes

Q.108 Which structure differentiates eukaryotic from a prokaryotic cell?
A. Ribosomes
B. Cell wall
C. Cell membrane
D. Golgi complex

FLUID MOSAIC MODEL

Q.109 The structure of plasma membrane is mainly held together by:
A. Proteins
B. Carbohydrates
C. Phospholipids
D. All of the above

Q.110 Ions cannot cross which part of the plasma membrane?
A. Phospholipid bilayer
B. Channel proteins
C. Both A and B
D. None of the above

Q.111 Damage to one of the following immediately kills the cell whether it is prokaryotic or eukaryotic?
A. Nucleus
B. Mitochondria
C. Cell membrane
D. All of these

Q.112 What part of the cell serves as an intracellular highway?
A. ER
B. Golgi apparatus
C. Cell membrane
D. Mitochondria

Q.113 Glycolipids in the plasma membrane are located at?
A. Inner leaflet of the plasma membrane
B. The outer leaflet of the plasma membrane
C. Evenly distributed in the inner and outer leaflets
D. Varies to cell types

Q.114 Which statement is true about lipid bilayer of plasma membrane?
A. Permeable to large ionic polar molecule
B. Permeable to small ionic molecule
C. Permeable to only polar molecule
D. None of the above

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Q.115 Which among the following defines GPI anchored proteins?
A. Integral proteins of the plasma membrane
B. Proteins that bind to ion gated channels in plasma membrane
C. Proteins which randomly bind to lipids of plasma membrane
D. Peripheral proteins of plasma membrane

Q.116 Secretion of insulin from beta cells of pancreas is an example of which membrane function?
A. Endocytosis
B. Phagocytosis
C. Exocytosis
D. Pinocytosis

Q.117 Glycolipids and glycoproteins have structural role in which matrix structure of animal and bacterial cell?
A. Extracellular
B. Intracellular
C. Both A and B
D. Plasma membrane

Q.118 Fatty acids move through the plasma membrane by which transport method?
A. Passive transport
B. Non-facilitated transport
C. Active transport
D. Facilitated transport

Q.119 What percentage of protein is found in the cell membrane?
A. 20-40
B. 40-50
C. 60-80
D. 90

Q.120 Cell membrane contains:
A. Lipoproteins and glycolipids
B. Phospholipids and proteins
C. Lipoproteins and phospholipids
D. All of these

Q.121 Fluidity of cell membrane is due to:
A. Lipid bilayer
B. Proteins partially and fully embedded in it
C. Phospholipids slide pass each other and proteins embedded in it in mosaic manner
D. All of these

Q.122 Cell membrane is chemically composed of lipids and_____.
A. Protein
B. Carbohydrates
C. Both A and B
D. None of these

Q.123 According to fluid mosaic model, the plasma membrane is composed of which of the following?
A. Phospholipid
B. Intrinsic proteins
C. Extrinsic proteins
D. All of these

Q.124 Distribution of intrinsic proteins in the plasma membrane is?
A. Random
B. Symmetrical
C. Asymmetrical
D. None of these

Q.125 Movement of the material across the cell membrane which does not requiring expenditure of metabolic energy is called?
A. Active transport
B. Passive transport
C. Diffusion
D. Both B and C

Q.126 Protein for cell membrane are made by:
A. Rough endoplasmic reticulum
B. Smooth endoplasmic reticulum
C. Nucleus
D. Mitochondria

Q.127 The fluid mosaic model of plasma membrane proposes that membranes are:
A. Solid
B. Semi-solid
C. Fluid
D. Liquid

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Q.128 Which is not an example of transmembrane transport between different subcellular compartments?
A. Transport from the stroma into thylakoid space
B. Transport from the cytoplasm into the lumen of the endoplasmic reticulum
C. Transport from mitochondrial intermembrane space into the mitochondrial matrix
D. Transport from the endoplasmic reticulum into the Golgi complex

Q.129 Which of the modes of cellular transport requires energy?
A. Active transport
B. Passive transport
C. Osmosis
D. Diffusion

Q.130 Why phospholipids are major part of the lipid bilayer in plasma membranes?
A. They have a nitrogenous base in the head region
B. They have fatty acids in the tail region
C. They are amphipathic in nature
D. They have a phosphate group in the head region

Q.131 Carbon dioxide passes through plasma membrane of cells by:
A. Active transport
B. Passive transport
C. Facilitated diffusion
D. Passive diffusion

Q.132 Which of the statement about cell membrane is not true?
A. It contains protein molecules embedded in lipid bilayer
B. It is a differentially permeable membrane
C. It contains charged pores thus ions being charged particles across cell membrane much easier than neutral particles
D. It may get infolded to engulf solid or liquid material

Q.133 What was the unit membrane model?
A. Plasma membrane has lipid bilayer
B. Proteins are embedded in the lipid bilayer
C. Plasma membrane has charged pores for transport of materials which cannot penetrate through the lipid bilayer
D. All of the above

Q.134 Transverse diffusion (flip-flop) is the movement due to which of the following molecules?
A. Cholesterol molecule
B. Phospholipid
C. Protein
D. Amino acid

Q.135 How is the ATP molecule used by the cell?
A. Synthesis of complex compounds
B. Active transport
C. Muscular contraction
D. All of these

Q.136 Diffusion is opposite to
A. Osmosis
B. Effusion
C. Affusion
D. None of these

Q.137 Which of the following substance is most favorable structural component of biological membranes?
A. Hydrophilic carbohydras
B. Hydrophobic fats
C. Both A and B
D. None of these

Q.138 Phosphatidylserine residues in the plasma membrane are located at?
A. The outer leaflet of the plasma membrane
B. Inner leaflet of the plasma membrane
C. Evenly distributed in the inner and outer leaflet
D. None of these

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Q.139 Which one is not cytoplasmic body?
A. Mitochondria
B. Vacuole
C. Cell membrane
D. Ribosome

Q.140 Plasma membrane by volume is mainly made up of:
A. Proteins
B. Phospholipids
C. Glycoproteins
D. Carbohydrates

Q.141 It is not a role of cell membrane:
A. Initiation of cell division
B. Transport of material
C. Transmission of nerve impulse
D. Site for receptors

Q.142 Self-repairing is present in:
A. Cell wall
B. Cell membrane
C. Capsule
D. Slime

Q.143 The basic framework structure of all types of membranes re :
A. Glycolipids
B. Glycoproteins
C. Lipoproteins
D. Nucleoproteins

Q.144 Fibers of extracellular matrix are attached to _____ plasma membrane.
A. Phospholipids
B. Glycolipids
C. Proteins
D. Carbohydrates

Q.145 Which of the statements correctly describes why ions are unable to cross the plasma membrane without channel proteins?
A. They are unable to cross the hydrophilic phosphate heads of the lipid bilayer
B. They are unable to cross the hydrophobic tails of the lipid bilayer
C. They are unable to cross both the phosphate heads and fatty acid chains of the lipid bilayer
D. They are too big to cross the plasma membrane

Q.146 Hydrophobic character in plasma membrane is exhibited by:
A. Fatty acids in tail
B. Phospholipid head
C. Intrinsic protein
D. Extrinsic protein

OUT OF SYLLABUS

Q.147 What would be the resolving power of the objective length in a microscope, if the eyepiece is of 10X and total magnification is 40X?
A. 4
B. 10
C.40
D. 400

Q.148 The function of the centrosome is?
A. Osmoregulation
B. Secretion
C. Protein synthesis
D. Formation of spindle fibres

Q.149 Centrioles are composed of how many triplets of microtubules?
A. 6
B. 9
C. 12
D. 15

Q.150 A chromosome in which a centromere stays at one end is call
A. Metacentric
B. Teloce
C. Acrocentric
D.

Q.151 Who opposed the idea that cell is an e
A. Lorenz oken
C. Robert Hook

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Q.152 The image represent by compound microscope is:
A. Real
B. Virtual inverted
C. Virtual
D. Real inverted

Q.153 Cellular organelles that interact with hydrogen peroxide are called?
A. Glyoxysomes
B. Lysosomes
C. Ribosomes
D. Peroxisomes

Q.154 Compound Microscope was first used by:
A. A.V. Leeuwenhoek
B. Pasture
C. Janssen and Hans
D. None of these

Q.155 The long unbranched, slender tubulin protein is called?
A. Microtubules
B. Intermediate filament
C. Actin
D. All of these

Q.156 Which of the following is not a tenet of the Cell Theory?
A. Cells carry genetic information in the form of DNA
B. Cells are the basic functional unit of life
C. Cells arise from pre-existing cells
D. All cells have membrane-bound organelles

Q.157 A cell with fully elastic wall is placed in hypertonic solution. What will not occur?
A. Change in cell size and shape
B. The whole cell will shrink
C. Cytoplasm shrinks from the cell wall and undergoes plasmolysis
D. Decries in cell size

Q.158 Which of the following is involved in the conversion of fats to carbohydrates by oxidation of fats?
A. Peroxisomes
B. Microsomes
C. Lysosomes
D. Glyoxysomes

Q.159 Magnifying power of electron microscope as compared to eye is?
A. 500 X
B. 100 000 X
C. 500 000 X
D. 250 000 X

Q.160 The human naked eye can differentiate between two points which are how much apart?
A. 1 mm
B. 0.1 mm
C. 2 dm
D. 1 dm

Q.161 The rigidity of leaves and younger parts of the plants is contributed by?
A. Microtubules
B. Mitochondria
C. Actin
D. Glyoxysomes

Q.162 The isolation of different cellular components to determine their chemical composition can be achieved by?
A. Cell differentiation
B. Chromatography
C. Cell fractionation
D. All of these

Q.163 Which of the following statement is incorrect about Glyoxysomes?
A. They contain enzymes which help in conversion of fatty acids into carbohydrate
B. They are abundant in soybeans but absent in pea
C. They are single membranous organelles
D. They are present throughout life of a plant and provide them with energy through Glyoxylate cycle

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Q.164 What is the correct sequence of steps in cell fractionation?

A. Homogenization, centrifugation, separation
B. Separation, homogenization, centrifugation
C. Centrifugation, homogenization, separation
D. Homogenization, separation, centrifugation

Q.165 Size of eukaryotic cell is:

A. 10-20 μm
B. 10-100 μm
C. 100-200 μm
D. 20-40 μm

Q.166 Omnis cellula a cellula is hypothesized by:

A. Schleiden
B. Lorenz Oken
C. Louis Pasteur
D. Rudolph Virchow

Q.167 Cytoskeleton provides:

A. Motility, maintenance, synthesis
B. Maintenance, synthesis only
C. Movement, Maintenance only
D. None of above

Q.168 Cells have energy in the form of:

A. Chemical and electrical
B. Mechanical
C. Kinetic
D. Chemical

ANSWER KEY

1	A	21	A	41	D	61	B	81	A	101	A	121	A	141	A	161	A
2	A	22	A	42	D	62	A	82	A	102	D	122	C	142	B	162	C
3	C	23	A	43	D	63	A	83	C	103	D	123	D	143	C	163	B
4	C	24	B	44	D	64	D	84	C	104	D	124	A	144	C	164	B
5	B	25	D	45	B	65	A	85	A	105	A	125	D	145	B	165	B
6	C	26	D	46	C	66	B	86	B	106	A	126	A	146	A	166	D
7	B	27	D	47	C	67	D	87	B	107	C	127	C	147	A	167	A
8	B	28	C	48	B	68	B	88	C	108	B	128	C	148	D	168	D
9	B	29	D	49	B	69	B	89	A	109	C	129	A	149	B		
10	D	30	C	50	C	70	C	90	B	110	A	130	C	150	B		
11	B	31	B	51	A	71	C	91	C	111	C	131	B	151	C		
12	A	32	C	52	D	72	B	92	C	112	C	132	C	152	D		
13	B	33	A	53	B	73	D	93	C	113	B	133	A	153	D		
14	C	34	B	54	D	74	D	94	A	114	D	134	B	154	A		
15	D	35	C	55	D	75	A	95	C	115	D	135	D	155	A		
16	A	36	C	56	D	76	D	96	A	116	C	136	D	156	A		
17	A	37	C	57	B	77	C	97	A	117	D	137	B	157	C		
18	D	38	C	58	D	78	C	98	C	118	A	138	B	158	D		
19	B	39	D	59	A	79	C	99	A	119	C	139	C	159	D		
20	A	40	A	60	D	80	A	100	D	120	D	140	B	160	B		

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5 TOPIC — COORDINATION & CONTROL NERVOUS & CHEMICAL COORDINATION

PRACTICE EXERCISE

NERVOUS SYSTEM

Q.1 Which part of the nervous system controls actions like walking and running?
A. Somatic nervous system
B. Parasympathetic nervous system
C. Sympathetic nervous system
D. Peripheral nervous system

Q.2 Which of the following does not form part of the central nervous system?
A. Brain
B. Spinal cord
C. Brain stem
D. Spinal nerves

Q.3 Central nervous system consists of:
A. Brain and spinal cord
B. Cerebrum and spinal column
C. Spinal nerves only
D. Cerebellum and brain stem only

Q.4 Nervous system is absent in:
A. *Sycon*
B. *Euplectella*
C. Jelly fish
D. Both a and b

Q.5 Brachial plexus supply to:
A. Heart
B. Upper limbs
C. Lower limbs
D. Abdomen

Q.6 The response of the sympathetic nervous system is known as:
A. Autonomic response
B. Flight response
C. Somatic response
D. Reflex response

Q.7 Parasympathetic system causes:
A. Digestion of food
B. Accelerated heart beat
C. High metabolism
D. Rapid muscle movement

Q.8 One of the actions of the parasympathetic nervous system is?
A. Inhibits peristalsis
B. Sweat secretion
C. Constriction of Pupils
D. Dilates Bronchioles

Q.9 The autonomic nervous system functions?
A. Act on external environment
B. Regulate the internal environment
C. Transmit motor information to brain
D. None of these

Q.10 The abundant inhibitory neurotransmitter found in the CNS is called?
A. Gamma-glutamyltransferase
B. Gamma-linolenic acid
C. Gamma-Aminobutyric acid
C. None of these

TRANSMISSION OF ACTION POTENTIAL BETWEEN CELLS–SYNAPSE

Q.11 The main transmitter for synapses that lie outside the central nervous system is?
A. Adrenaline
B. Serotonin
C. Dopamine
D. Acetylcholine

HORMONES

Q.12 What is the chemical nature of antidiuretic hormone?
A. It is a protein
B. It is an amino acid derivative
C. It is made from cholesterol
D. It is a lipoprotein

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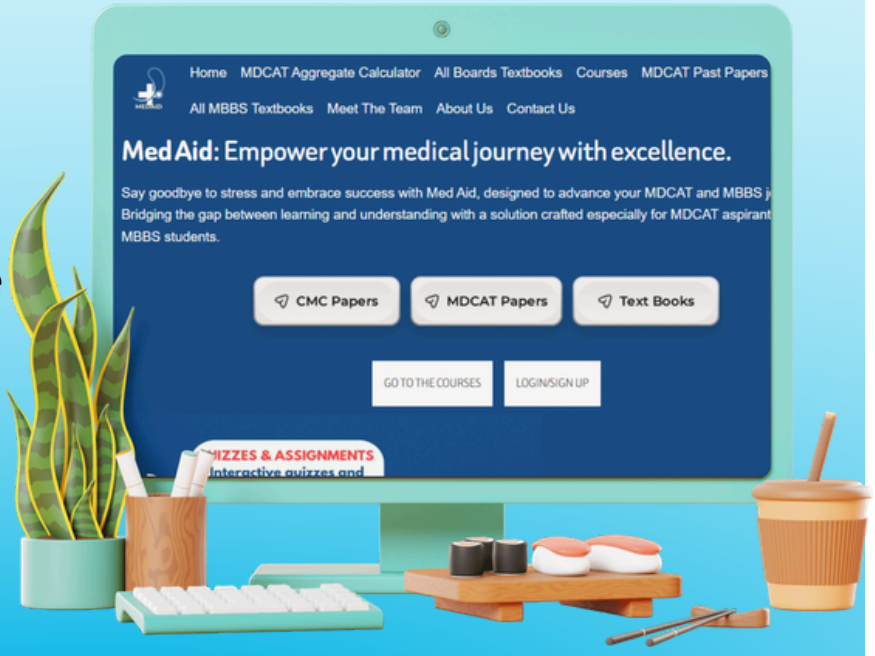

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Q.13 When vasopressin is not secreted, the condition that occurs is called?
A. Acromegaly
B. Diabetes mellitus
C. Dwarfism
D. Diabetes insipidus

Q.14 Cortisol brings about an increase in blood glucose level mainly by its production from protein and _____.
A. Glucagon
B. Insulin
C. Estrogen
D. Progesterone

Q.15 Which disease is represented by excess MSH secretion?
A. Addison's
B. Alzheimer's
C. Parkinson's
D. Cohn's

Q.16 Primary hormone is:
A. STH
B. FSH
C. LH
D. Prolactin

Q.17 Which of the following is not a gonadotrophic hormone?
A. Estrogen
B. LH
C. FSH
D. Prolactin

Q.18 In females testosterone is produced from:
A. Graffian follicle
B. Adrenal cortex
C. Adrenal medulla
D. None

Q.19 Vascularization in endometrium in induced by:
A. LH
B. Estrogen
C. FSH
D. ICSH

Q.20 Which of the following is taken from blood by the liver due to insulin?
A. Glucagon
B. Glucose
C. Glucocorticoid
D. All of these

Q.21 Deficiency in the production of parathormone causes which of the following disease?
A. Brittle bones
B. Soft bones
C. Rickets
D. Tetany

Q.22 Tetany is considered to be the result of a
A. Hyperglycemia
B. Hypercalcemia
C. Hypoglycemia
D. Hypocalcaemia

Q.23 Thyroid stimulating hormone is produced by:
A. Anterior lobe of thyroid
B. Exterior lobe of pituitary gland
C. Posterior lobe of pituitary gland
D. Anterior lobe of pituitary gland

Q.24 In humans placenta is established by:
A. Hypothalamus
B. Progesterone
C. Thalamus
D. Estrogen

Q.25 Deficiency of cortical hormones causes:
A. Cushing syndrome
B. Addison's disease
C. Dwarfism
D. Cretinism

Q.26 Goiter develops in which case?
A. Hyperthyroidism
B. Hypothyroidism
C. Both A & B
D. None of the above

Q.27 Thyroid hormone increases metabolic rate by:
A. Breakdown of nucleic acids
B. Breakdown of vitamins
C. Breakdown of proteins
D. Breakdown of carbohydrates

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Q.28 **Insufficient thyroxine in adults leads to:**
A. Dwarfism
B. Myxedema
C. Cretinism
D. Grave's disease

Q.29 **Which of the following is the effect of STH?**
A. Growth of body
B. Body metabolism
C. Glucose breakdown
D. Heat production

Q.30 **Decreased production of parathyroid leads to:**
A. Increase in calcium levels
B. Increase in vitamin B_{12}
C. Decrease in calcium levels
D. Decrease in vitamin B_{12}

Q.31 **It is not secreted by placenta:**
A. Progesterone
B. Estrogen
C. Human placental lactogen
D. LH

Q.32 **FSH is released from:**
A. Pituitary gland
B. Hypothalamus
C. Brain
D. Blood

ENDOCRINE GLANDS

Q.33 **The pea-shaped gland attached to the brain's hypothalamus is known as:**
A. Iodopsin glands
B. Thyroid gland
C. Rhodopsin glands
D. Pituitary glands

Q.34 **Thymus is found in human body _____.**
A. In the medulla oblongata
B. In the mediastinum if the upper thorax
C. Both A & B
D. None

Q.35 **Largest endocrine gland is_____.**
A. Pancreas
B. Pituitary
C. Thyroid
D. Thymus

FEEDBACK MECHANISM

REFLEXES AND REFLEX ARC

Q.36 **Which of these does not participate in reflex actions?**
A. Motor neuron
B. Effector
C. Pituitary
D. Spinal cord

Q.37 **Most reflex arcs are:**
A. Monosynaptic reflex
B. Polysynaptic reflex
C. Hemi Synaptic Reflex
D. None of these

Q.38 **The patellar reflex and the Achilles reflex are examples of:**
A. Monosynaptic reflex
B. Blood and water
C. Hemi Synaptic reflex
D. Blood and fluid

Q.39 **The term that should be last in the reflex sequence is:**
A. Receptor
B. Effector
C. Sensory neuron
D. Motor neuron

Q.40 **Reflex action is controlled by:**
A. Peripheral nervous system
B. Central nervous system
C. Autonomic nervous system
D. Circulatory system

Q.41 **The path taken by the nerve impulses in a reflex is called:**
A. Nerve cell
B. Reflex arc
C. Receptor cells
D. Mixed nerve

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Q.42 Reflex action is the simplest form of response in:
A. Higher Animals
B. Smaller animals
C. Simpler animals
D. Lowest animals

Q.43 Which part of the nervous system is responsible for controlling reflex action?
A. Corpus callosum
B. Pons
C. Vermis
D. Spinal cord

44 Monosynaptic refers to the presence of how many chemical synapse/s?
A. 1
B. 2
C. 3
D. 4

Q.45 All of the following about reflex action are true except:
A. It is voluntary
B. It is found in higher animals
C. It is involuntary
D. All of these

Q.46 Which of the following is an example of superficial reflex?
A. Ankle jerk
B. Knee jerk
C. Abdominal reflex
D. Both A & B

Q.47 Reflex arc comprises of:
A. Motor nerve
B. Sensory nerve
C. Both A and B
D. Mixed nerve

Q.48 Which type of reflex affect inner organs?
A. Autonomic reflex arc
B. Somatic reflex arc
C. Both A and B
D. None of these

Q.49 A neural pathway that controls an action reflex is called:
A. Nerve cell
B. Reflex arc
C. Receptor cells
D. Mixed nerve

Q.50 Which of the following is made up of an afferent pathway from a receptor and an efferent pathway to an effector?
A. Nerve cell
B. Reflex arc
C. Receptor cells
D. Mixed nerve

Q.51 An involuntary and nearly instantaneous movement in response to a stimulus is called:
A. Reflex
B. Reflex arc
C. Neuron
D. Synapse

Q.52 The shortest way by which impulses travel from the receptor to the effector is called?
A. Synapse
B. Reflex actin
C. Reflex arc
D. Voluntary response

Q.53 The stretch reflex, the Golgi tendon reflex, the crossed extensor reflex and the withdrawal reflex are included in:
A. Stretch reflex
B. Spinal reflex
C. Golgi tendon reflex
D. Crossed extensor reflex

LEVELS OF THE SPINAL CORD AND ITS MAIN FUNCTIONS

Q.54 Gray matter is primarily composed of:
A. Axons
B. Synapse
C. Neuron somas
D. None of these

Q.55 The spinal cord is part of:
A. Brain
B. Central nervous system
C. Peripheral nervous system
D. Somatic division

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Q.56 What is the length of spinal cord?
A. 10-20 cm
B. 20-30 cm
C. 40-50 cm
D. 60-90 cm

Q.57 The spinal cord and spinal nerve roots are wrapped within three layers called:
A. Pleura
B. Meninges
C. Synapse
D. None of these

Q.58 The spinal cord acts as a link between body parts and_____.
A. Brain
B. Skull
C. Heart
D. Lungs

Q.59 The material in brain and spinal cord contains cell bodies and dendrite of nerve cells is:
A. White matter
B. Blue matter
C. Brown matter
D. Gray matter

Q.60 Choose the region of spinal cord:
A. Cervical
B. Thoracic
C. Lumbar
D. All of these

Q.61 The spinal cord is continuous with which part of the brain?
A. Cerebrum
B. Medulla oblongata
C. Cerebellum
D. Pons

Q.62 In the peripheral nervous system, the nerves that arise from spinal cord and brain are called?
A. Frontal nerves
B. Temporal nerves
C. Cranial nerves
D. Spinal nerves

Q.63 Out of 31 pairs of spinal nerves, how many pairs of coccygeal nerves are there?
A. 1
B. 5
C. 10
D. 12

Q.64 The ventral root of the spinal cord contains axons of:
A. Sensory neuron
B. Motor neuron
C. Mixed neuron
D. Spinal neuron

Q.65 Out of 31 pairs of spinal nerves, how many pairs of lumbar nerves are there?
A. 5
B. 10
C. 15
D. 20

Q.66 The medulla oblongata is found on which of the following regions?
A. Top of brain
B. Top of spinal cord
C. Behind the hypothalamus
D. Behind the thalamus

Q.67 Out of 31 pairs of spinal nerves, how many pairs of sacral nerves are there?
A. 5
B. 10
C. 12
D. 15

Q.68 The dorsal root of spinal cord is:
A. Sensory
B. Motor
C. Mixed
D. All A, B and C are correct

Q.69 White matter has:
A. Myelinated sheath
B. Non-myelinated sheath
C. Myelinated neuron
D. Non-myelinated neuron

Q.70 The shape of grey matter is:
A. Spherical
B. Mosquito
C. Butterfly
D. Rectangular

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Q.71 The spinal cord is divided into how many different regions?
A. 2
B. 6
C. 4
D. 8

Q.72 How many laminae present in the spinal cords grey matter?
A. 10
B. 8
C. 12
D. 9

Q.73 White matter is primarily composed of:
A. Axons
B. Synapse
C. Neuron somas
D. None of these

Q.74 Out of 31 pairs of spinal nerves, how many pairs of thoracic nerves are there?
A. 8
B. 10
C. 12
D. 15

Q.75 Number of pairs of spinal nerves are:
A. 31
B. 12
C. 13
D. None

76 What is the most important structure between body and brain?
A. Neck
B. Spinal cord
C. Blood vessels
D. Skeleton

ARTS OF THE BRAIN WITH THEIR MAIN FUNCTIONS

Q.77 Regulation of _____ is not a function of hypothalamus in humans.
A. Body temperature
B. Blood water potential
C. Urine osmolarity
D. Circadian rhythms & emotions

Q.78 The part of forebrain which lies below the cerebrum is?
A. Hypothalamus
B. Thalamus
C. Cerebellum
D. Cerebral cortex

Q.79 Which portion of the brain is primarily responsible for transmitting the information to other parts of the nervous system?
A. White matter
B. Gray matter
C. Medulla
D. All A, B and C

Q.80 The largest part of forebrain which controls the intelligence, emotions and skeletal muscles is classified as?
A. Hypothalamus
B. Thalamus
C. Cerebellum
D. Cerebrum

Q.81 Sensory areas that receive impulses from the skin are contained by which of the following?
A. Frontal lobe
B. Parietal lobe
C. Occipital lobe
D. Temporal lobe

Q.82 Breathing and heart rate is controlled by which of these?
A. Corpus callosum
B. Hippocampus
C. Medulla
D. Thalamus

Q.83 Which of the following is required for learning?
A. Medulla
B. Thalamus
C. Hypothalamus
D. Hippocampus

Q.84 Which of the followings is related to hypothalamus?
A. Sleep-wake cycle
B. Water balance
C. Thermoregulation
D. All of these

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Q.85 Midbrain is also known as:
A. Pons
B. Mesencephalon
C. Medulla
D. All of these

Q.86 It is not correct about cerebrospinal fluid:
A. Present between meninges
B. Provides protection
C. Fills central canal of spinal cord
D. pH is below 7

Q.87 Brain part that coordinates skeletal muscles:
A. Cerebrum
B. Cerebellum
C. Amygdala
D. Medulla

Q.88 It acts as a relay center connecting hindbrain with the forebrain:
A. Forebrain
B. Midbrain
C. Hindbrain
D. Limbic system

Q.89 Which of the following is not the function of medulla oblongata?
A. Breathing
B. Swallowing
C. Connection between brain and spinal cord
D. Heart beat

Q.90 Which is involved in long term memory?
A. Cerebrum
B. Hypothalamus
C. Hippocampus
D. Thalamus

Q.91 Which of these is involved in coordinated movements of the body?
A. Cerebellum
B. Cerebrum
C. Medulla
D. Pons

Q.92 The diencephalon comprises of:
A. Pons and medulla
B. Thalamus and limbic system
C. Pons and medulla
D. Hypothalamus and limb

Q.93 The brain is protected by:
A. Sacrum
B. Cranium
C. Humerus
D. Scapula

Q.94 The cerebrospinal fluid is similar in composition to _____.
A. Amniotic fluid
B. Pleural fluid
C. Synovial fluid
D. Blood plasma

Q.95 Which fluid bathes the neurons of brain and spinal cord and provides cushions against the bumps and jolts?
A. Blood
B. Interstitial fluid
C. Intracellular fluid
D. Cerebrospinal fluid

Q.96 The brain is mainly divided into_____ parts.
A. 2
B. 3
C. 4
D. 5

Q.97 The embryonic hindbrain gives rise to which structures in brain?
A. Diencephalon
B. Midbrain
C. Cerebrum and basal ganglia
D. Cerebellum, pons and medulla oblongata

Q.98 The communication between the two hemispheres is the function of:
A. Corpus callosum
B. Hindbrain
C. Cerebellum
D. Cerebrum

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Q.99 The composition of brain stem is:
A. Spinal cord, axon, vertebra
B. Cerebrum, cerebellum, pons
C. Medulla, pons, midbrain
D. Thalamus, midbrain, pons

Q.100 Which lobe is involved in short-term memory, speech, musical rhythm and some degree of smell recognition?
A. Frontal
B. Parietal
C. Temporal
D. Occipital

Q.101 Which of the following is involved in sleeping and waking?
A. Thalamus
B. Brain stem
C. Hypothalamus
D. Cerebellum

Q.102 Which part of the brain connects the cerebrum with the spinal cord?
A. Forebrain
B. Cerebrum
C. Cerebellum
D. Brainstem

Q.103 The functional parts of forebrain are:
A. Thalamus and limbic system
B. Thalamus and cerebrum
C. Cerebrum, limbic system and thalamus
D. Cerebrum and limbic system

104 The brain portion that is reduced in humans is:
A. Forebrain
B. Midbrain
C. Hindbrain
D. Limbic system

105 The auditory relay center is found in:
A. Corpus callosum
B. Hindbrain
C. Forebrain
D. Midbrain

Q.106 Hindbrain includes:
A. Medulla, pons and cerebellum.
B. Medulla, cerebellum and hypothalamus.
C. Cerebellum, medulla and brainstem.
D. All of the above.

Q.107 Which part increase the surface area of forebrain?
A. Cerebral cortex
B. Infundibulum
C. Corpus callosum
D. None of the above

Q.108 Which brain part is responsible for our basic and primitive emotions?
A. Limbic system
B. Thalamus
C. Hypothalamus
D. Cerebrum

Q.109 The thalamus and the hypothalamus are located in which region of the brain?
A. Brain stem
B. Cerebrum
C. Cerebellum
D. Diencephalon

Q.110 The left side of the body is controlled by:
A. Left cerebral hemisphere
B. Right cerebral hemisphere
C. Hippocampus
D. Corpus callosum

Q.111 The lighter, inner section of the brain is called:
A. White matter
B. Gray matter
C. Reflex arc
D. Medulla

Q.112 The brain area responsible for screening all incoming sensory data is:
A. Hypothalamus
B. Thalamus
C. Cerebellum
D. Cerebral cortex

Q.113 The brain part involved in conscious activities is:
A. Cerebral cortex
B. Limbic system
C. Brain stem
D. Thalamus

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Q.114 Medulla, pons and cerebellum are found in which brain part?
A. Corpus callosum
B. Midbrain
C. Forebrain
D. Hindbrain

Q.115 The darker, outer portion of the brain is called:
A. White matter
B. Gray matter
C. Reflex arc
D. Medulla

Q.116 Central nervous system is present in:
A. Asymmetrical animals
B. Bilaterally symmetrical animals
C. Radial symmetrical animals
D. Both B and C

NERVE IMPULSE

Q.117 Terminal branches of axons end in:
A. Myelin sheath
B. Dendrites of the next neuron
C. Synaptic cleft
D. Postsynaptic membrane

Q.118 Resting potential in nerve cells is maintained by:
A. Sodium pumps
B. Potassium pumps
C. Calcium pumps
D. None of the above

Q.119 What is the condition of the neurons under resting membrane potentials?
A. Inner surface of neuron is more positive
B. Both of these surfaces are equally positive
C. Outer surface of neuron is more positive
D. All of these

Q.120 Resting membrane potential is:
A. -80 mv
B. -70 mv
C. 50 mv
D. -85 mv

Q.121 What is the approximate value of the active membrane potential?
A. 0.17V
B. -50mv
C. 0.05 V
D. Both A and B

Q.122 In myelinated neurons the impulse jumps from node to node, what is this transmission called?
A. Myelinated impulse
B. Jumping impulse
C. Saltatory impulse
D. All of these

Q.123 Nerve cells transmit messages faster when they have:
A. Many dendrites
B. Myelinated axons
C. Non-myelinated axons
D. Many genes

Q.124 The sites where nerve impulse is transmitted from the nerve endings to the skeleton muscle cell membranes?
A. Z discs
B. Dendrites
C. Sarcomeres
D. Neuromuscular junctions

Q.125 Repolarization is restored when:
A. Sodium ions diffuse in
B. Potassium diffuses out
C. Potassium diffuses in
D. Sodium diffuses out

Q.126 Acetylcholine is:
A. Enzyme
B. Metabolic intermediate
C. PNS neurotransmitter
D. CNS neurotransmitter

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STEPS INVOLVED IN NERVOUS COORDINATION

Q.127 Stretch receptors are present in _____ of the tetrapods.
A. Hepatic arteries
B. Carotid arteries
C. Renal arteries
D. Pulmonary arteries

Q.128 Stimulus of deep pressure is detected by:
A. Pacinian corpuscles
B. Krause end bulb
C. Meissner's corpuscles
D. Merkel's endings

Q.129 Stretch receptors are present in _____ of tetrapods.
A. Muscles only
B. Organs only
C. Both A and B
D. Bone only

Q.130 Receptors are:
A. Brain
B. Muscle and glands
C. Eye and nose
D. Nerve cells

Q.131 Which types of the receptors are present in the ear?
A. Chemoreceptors
B. Photoreceptors
C. Thermoreceptors
D. Mechanoreceptors

'32 After leaving the spinal cord, the spinal nerve gets divided into nerve fibers, connecting to which of the following?
A. Receptors
B. Effectors
C. Midbrain
D. All parts of the body

Q.133 The sensory neuron has pain-sensitive endings in _____.
A. Hypothalamus
B. Bones
C. Skin
D. Muscles

Q.134 Synaptic vesicles discharge which of the following chemical at the neuromuscular junction?
A. Acetylcholine
B. Adrenaline
C. Estradiol
D. Testosterone

Q.135 Components of neural arc:
A. 5
B. 6
C. 7
D. 4

NEURONS (STRUCTURE AND TYPES)

Q.136 One of the functions of the neuroglial cells is to protect and support which of the following?
A. Nephrons
B. Myoid cells
C. Neurons
D. none of these

Q.137 The gap in the myelin sheath between adjacent Schwann cells is called?
A. Dendrite
B. Soma
C. Node of Ranvier
D. Stroma

Q.138 It carries impulses away from neuron:
A. Axon
B. Dendrites
C. Soma
D. Dendron

Q.139 The concentrations of the cell bodies of the neurons called?
A. Axons
B. Introns
C. Ganglia
D. Dendrites

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Q.140 _____ carry information towards the soma of neuron.
A. Dendrites
B. Axon
C. Perikaryon
D. Both A and B

Q.141 Staining part of neuron is called:
A. Axon
B. Dendrites
C. Cell body
D. A and C

Q.142 The neurons responsible for converting various external stimuli that come from the environment into corresponding internal stimuli is called:
A. Motor
B. Sensory
C. Both A and B
D. Mixed

Q.143 Interneuron is also known as:
A. Relay neuron
B. Sensory neuron
C. Mixed neuron
D. Synapse

Q.144 Which of the following statement about neuron is incorrect?
A. They not only conduct impulses but also generate them
B. They are not the only cellular component of nervous system
C. They may show limited regenerative capabilities
D. Like all the living cell, when they mature and divide to form similar cells

Q.145 Motor neuron are multipolar but:
A. Less branched
B. More branched
C. No branched
D. None

Q.146 Node of Ranvier are also known as:
A. Myelin sheath
B. Neurofibril node
C. Myofibril node
D. None

Q.147 Nicotine may induce:
A. Vomiting
B. Diarrhoea
C. Tetanus
D. Both A & B

Q.148 A motor neuron and all the muscle fibers it supplies is called:
A. Motor unit
B. Neuromuscular junction
C. Neural unit
D. Microtubules

Q.149 The neurons that interpret and receive information and stimulate motor neurons are what type of neuron?
A. Sensory neurons
B. Motor neurons
C. Interneurons
D. Rotator neurons

Q.150 Which is not a neurotransmitter?
A. Nor-epinephrine
B. L-Dopa
C. Dopamine
D. None

Q.151 Which form brain and spinal cord?
A. Sensory neurons
B. Motor neurons
C. Interneurons
D. Dendrites

Q.152 Cytoplasm and ribosomes are present in which part of neuron?
A. Dendrite
B. Cell body
C. Axon
D. All of these

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POSITIVE FEEDBACK MECHANISM

Q.153 Which of the following is not an example of positive feedback?

A. A forest fire slowly expands outward, which provides it with even more fuel to burn.
B. During childbirth, oxytocin creates a stimulus which causes the hypothalamus to release more oxytocin
C. As more buffalo begin to run in a herd, the overall level of panic increases. This results in even more buffalo running.
D. As blood calcium levels increase, parathyroid hormone (PTH) is reduced.

NEGATIVE FEEDBACK MECHANISM

Q.154 One of these processes does not happen as a result of negative feedback mechanism in humans?

A. Secretion of insulin by pancreas in response to increased blood glucose concentration.
B. Secretion of oxytocin in response to dilation of cervix during childbirth.
C. Secretion of glucagon by pancreas in response to decreased blood glucose concentration.
D. All of the above.

OUT OF SYLLABUS

Q.155 When cocaine is used as a stimulant, it interferes with the CNS at the reuptake of which hormone?

A. Testosterone
B. Dopamine
C. Serotonin
D. Adrenaline

Q.156 Experience has no influence on which type of behavior?

A. Kinesis
B. Imprinting
C. Habituation
D. Insight learning

Q.157 Which of the following is not a function of Abscisic acid?

A. Inhibits stem and root growth during drought.
B. Closing of stomata during wilting.
C. Inhibits flowering in long-day plants
D. Promotes bud initiation during growth season

Q.158 Which statement is incorrect about ethylene production?

A. Climacteric is burst of respiratory activity in fruit ripening
B. It is associated with ethane production
C. It helps in fruit ripening
D. It helps in fruit set

Q.159 The promoter of leaf senescence is?

A. Gibberellins
B. Cytokinins
C. Auxins
D. Abscisic acid

Q.160 Disorders caused due to disturbance in nerve impulse generation and transmission is called?

A. Nerve impulse disorder
B. Nervous disorder
C. Transmission disorder
D. Functional disorder

Q.161 A crawling snail when we tab glass retract into its shell, tapping has no effect. This form of learning is:

A. Habituation
B. Imprinting
C. Insight learning
D. Latent learning

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Q.162 Most of brain tumors are caused by:
A. Mutation in DNA of proteins involved in glycolysis
B. Mutation in DNA of proteins involved in cell cycle regulation
C. Mutation in DNA of proteins involved in fatty acid metabolism
D. Mutation in DNA of proteins involved in extracellular transport

Q.163 Type of behavior that evolves during life cycle of individual:
A. Learning
B. Instinctive
C. Both A and B
D. None

Q.164 Brain tumors are due to:
A. Neuroglial cells
B. Neurons
C. Epithelial cells
D. Connective tissues

Q.165 Memory loss occurs in which disease?
A. Parkinson
B. Alzheimer
C. Epilepsy
D. All of these

Q.166 In which condition, brain produced more impulses than normal:
A. Epilepsy
B. Alzheimer's disease
C. Parkinson's disease
D. Lou Gehrig's disease

Q.167 Commercial use of cytokinins:
A. Keeping flower fresh
B. Keeping lettuce fresh
C. Break seed dormancy
D. All of these

Q.168 Which plant hormone promotes abscission?
A. Auxins
B. Gibberellins
C. Cytokinins
D. Abscisic acid

ANSWER KEY

1	A	21	D	41	B	61	B	81	B	101	C	121	C	141	C	161	A
2	D	22	D	42	A	62	A	82	C	102	D	122	C	142	B	162	B
3	A	23	D	43	D	63	A	83	D	103	C	123	B	143	A	163	A
4	D	24	B	44	A	64	B	84	D	104	B	124	D	144	D	164	A
5	B	25	B	45	A	65	A	85	B	105	D	125	B	145	A	165	B
6	B	26	C	46	C	66	B	86	D	106	A	126	C	146	D	166	A
7	A	27	D	47	C	67	A	87	B	107	A	127	B	147	D	167	D
8	C	28	B	48	C	68	A	88	B	108	A	128	A	148	A	168	D
9	B	29	A	49	B	69	C	89	C	109	D	129	C	149	C		
10	C	30	C	50	B	70	C	90	C	110	B	130	C	150	B		
11	D	31	D	51	A	71	C	91	A	111	A	131	D	151	C		
12	A	32	A	52	C	72	D	92	B	112	D	132	B	152	B		
13	D	33	D	53	B	73	A	93	B	113	A	133	C	153	D		
14	A	34	B	54	C	74	C	94	D	114	D	134	A	154	B		
15	A	35	A	55	B	75	A	95	D	115	B	135	A	155	B		
16	D	36	C	56	C	76	B	96	B	116	B	136	C	156	A		
17	A	37	B	57	B	77	D	97	D	117	C	137	C	157	D		
18	B	38	A	58	A	78	B	98	A	118	D	138	A	158	A		
19	B	39	B	59	D	79	C	99	C	119	C	139	C	159	D		
20	B	40	B	60	D	80	D	100	C	120	B	140	A	160	B		

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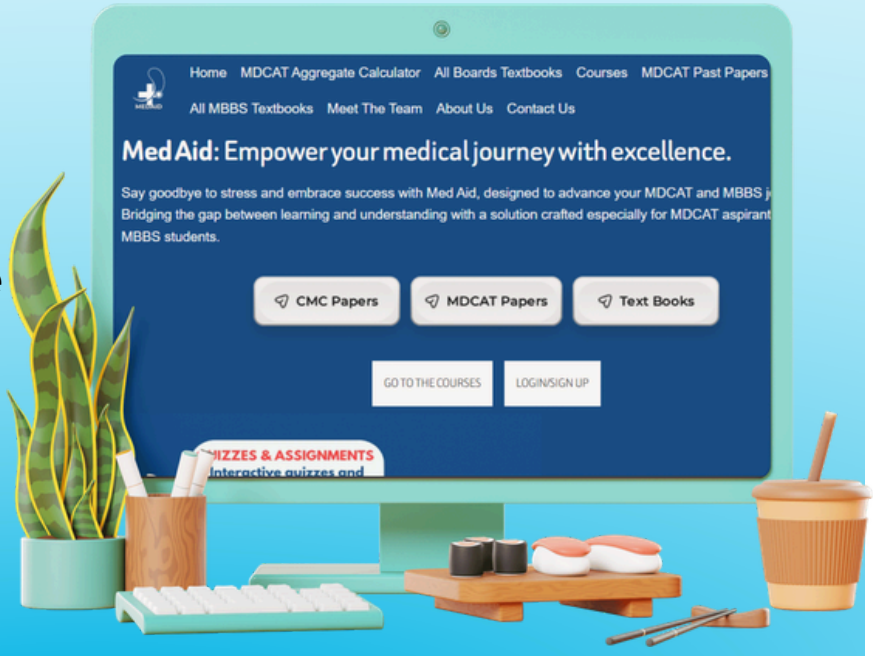

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6 TOPIC DIVERSITY AMONG ANIMALS

PRACTICE EXERCISE

CHARACTERISTICS AND DIVERSITY AMONG THE ANIMALS (ANIMAL PHYLA)

CHARACTERISTICS

Q.1 The fate of each blastomere is foretold. What will be the cleavage?
A. Spiral and indeterminate
B. Radial and indeterminate
C. Radial and indeterminate
D. Spiral and determinate

Q.2 All of the following coelenterates show alternation of generation except:
A. *Hydra*
B. *Obelia*
C. *Aurelia*
D. All of these

Q.3 Which system is present in nematodes?
A. Sac - like digestive system
B. Circulatory system
C. Respiratory system
D. Tube - like digestive system

Q.4 These give rise to nematocysts in Cnidaria:
A. Cnidocytes
B. Gastrozooids
C. Hydrozoids
D. Mesoglea

Q.5 Typically spiders' blood is blue due to the presence of which of the following?
A. Haemoglobin
B. Haemoerythrin
C. Haemocyanin
D. Both B and C

Q.6 80% of the food of sponges consists of which of the following?
A. Detrital organic particles
B. Phytoplanktons
C. Zooplankton and small animal
D. All of these

Q.7 Pseudocoelom develops from which of the following?
A. Blastopore
B. Plastoquinone
C. Splitting of mesoderm
D. Blastocoel

Q.8 Exoskeleton of coelenterates is made up of which of the following material?
A. Calcium
B. Silica
C. Chitin
D. Lignin

Q.9 Which of the following use book lungs to breathe?
A. Earthworm
B. Scorpions
C. Fish
D. All of these

Q.10 Sub-kingdom parazoa includes:
A. Annelida
B. Cnidaria
C. Porifera
D. Protozoa

Q.11 It is not a parasite:
A. Annelida
B. Nematoda
C. Porifera
D. Platyhelminthes

Q.12 Proglottids are present in:
A. *Dugesia*
B. *Schistostoma*
C. *Fasciola*
D. *Taenia*

Q.13 Respiratory pigment present in Molluscs is:
A. Hemoglobin
B. Haemocyanin
C. Myoglobin
D. None of the above

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Q.14 Deuterostomes have:
A. Spiral cleavage
B. Mouth develop form blastopore
C. Mesoderm is formed form developing gut
D. Schizocoelous

Q.15 Malpighian tubules are characteristic of:
A. Earth worm
B. Leech
C. Cockroach
D. Star fish

Q.16 In which era mammals dominated?
A. Paleozoic
B. Mesozoic
C. Cenozoic
D. Proterozoic

Q.17 Gut of acoelomates develop from:
A. Mesoderm
B. Endoderm
C. Mesoglea
D. Ectoderm

Q.18 *Periplaneta* belongs to which phylum?
A. Mollusca
B. Annelida
C. Echinodermata
D. Arthropoda

Q.19 The survival of an animal depends upon its ability to take some_____ from its environment?
A. Hydro carbons
B. Organic molecules
C. Chemical
D. Inorganic molecules

Q.20 Free living example of Platyhelminthes is?
A. *Dugesia*
B. *Fasciola*
C. *Taenia*
D. All of these

Q.21 Chitinous Setae are the locomotary organs of annelids which are present on?
A. Cell wall
B. Prostomium
C. Nucleolus
D. Parapodia

Q.22 Polychaeta have which of the following organs?
A. Tentacles
B. Palps
C. Eyes
D. All of these

Q.23 Which is not the characteristic of triploblasts?
A. They may be coelomate pseudocoelomate or acoelomate
B. They are included in grade bilateria
C. All of them have digestive system
D. All of them have blood vascular system

Q.24 *Ascaris Lumbericoides* is a:
A. Intestinal parasite
B. Blood parasite
C. Stomach parasite
D. Ureteral parasite

Q.25 In which of the following mesoderm is derived from wall of archenteron:
A. Protostomes
B. Diploblastic
C. Deuterostomes
D. Acoelomates

Q.26 Class Aves has advanced:
A. Pons
B. Medulla
C. Cerebrum
D. Cerebellum

Q.27 An example of largest invertebrate:
A. Squid
B. Spider
C. Octopus
D. *Armillaria*

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Q.28 In which of the following animals, placenta is formed?
A. Prototherians
B. Metatherians
C. Eutherians
D. All of these

Q.29 Circulatory system is open type in all of the following except?
A. Arthropoda
B. Gastropoda
C. Pelecypoda
D. Cephalopoda

Q.30 Which of the following is correct about insects?
A. Four pair of legs
B. Six jointed legs
C. Thorax is not present
D. Abdomen is attached to head

Q.31 Sperms released in water are carried to the mesenchyme in sponges by?
A. Stipules
B. Spicules
C. Spines
D. Amoeboid cell

Q.32 The organs of locomotion in annelids are which of the following?
A. Muscles
B. Hydrostatic skeleton
C. Parapodia
D. Bones

Q.33 Division of labor is not seen in which of these multicellular animals?
A. Hydra
B. Euplectella
C. Blood fluke
D. Tapeworm

Q.34 Birds are different from mammals in all except:
A. They have feathers instead of hairs
B. They are warm blooded
C. They lay hard shell eggs
D. They have syrinx as voice organ

Q.35 Mammary glands are present in:
A. Eutheria
B. Metatheria
C. Prototheria
D. All of these

Q.36 Which of the following has lungs?
A. Shark
B. Dipnoi
C. Rays
D. None

Q.37 Placenta is related to:
A. Sheep
B. Spiny ant eater
C. Duck bill platypus
D. Kangaroo

Q.38 Main difference between hemichordata and chordata lies in:
A. Possession of body cavity
B. Number of germinal layers
C. Nervous system
D. Body symmetry

Q.39 Pseudocoelom is a characteristic feature of which of the following?
A. Coelenterates
B. Platyhelminthes
C. Annelids
D. Aschelminthes

Q.40 Polymorphism is a characteristic feature of which group of animals?
A. Cnidaria
B. Annelida
C. Platyhelminthes
D. Echinodermata

Q.41 The single main opening of the sponge cavity is known as?
A. Ostia
B. Osculum
C. Sponogocoel
D. both a and b

Q.42 All the animals of the grade radiata are which of the following?
A. Unicellular
B. Triploblastic
C. Both a and b
D. Diploblastic

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Q.43 The only aquatic arthropods:
A. Crustaceans
B. Arachnida
C. Myriapods
D. Gastropods

Q.44 Cnidaria is characterized by which of the following?
A. Tissue level of organization
B. Coelenteron
C. Nematoblasts
D. All of these

Q.45 These animals have only left aortic arch in their circulatory system.
A. Crocodiles and mammals
B. Birds and mammals.
C. Mammals only
D. All of the above

Q.46 The animals in which coelom is formed due to splitting of mesoderm are known as which of the following?
A. Pseudocoelom
B. Schizocoelous
C. Amphicoelous
D. Enterocoelous

Q.47 *Mytilus* and *Anodonta* are example of which type of Molluscs?
A. Gastropods
B. Bivalves
C. Cephalopods
D. None of the above

Q.48 Which of the following is not a characteristic feature of tapeworm?
A. Each body segment has two sets of male and female reproductive organs
B. The digestive tract develops from endodermal cells in the embryo
C. The body can be cut into two parts, which are mirror images of each other, in one plane only
D. None of the above

Q.49 The skeleton of the sponges is in the form of variously shaped needle like structures called:
A. Stipules
B. Brails
C. Spine
D. Spicules

Q.50 *Euplectella* belongs to phylum
A. Porifera
B. Ctenophora
C. Echinoderm
D. None of the above

Q.51 All of the following are true for Platyhelminthes except?
A. Triploblastic
B. Bilateral symmetry
C. Coelomate
D. Flatworms

Q.52 The larvae of which of these animals resemble those of chordates?
A. Starfish
B. Cuttlefish
C. Catfish
D. Butterfly

Q.53 Inner layers of the sponges are made up of which of the following?
A. Pinacocytes
B. Choanoderm
C. Pinacoderm
D. Choanocytes

Q.54 The animals which belongs to division Radiata is/are?
A. Triploblastic
B. Diploblastic
C. Radioblast
D. All of these

Q.55 The sponges in which sperms develop first are included in the category of?
A. Peritandrous
B. Protandrous
C. Protandrous
D. Protandrous

Q.56 Lack of symmetry is identified in which group of animals?
A. Protozoa
B. Porozoa
C. Parazoa
D. Coelomates

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Q.57 Midgut in cockroach is a short narrow tube called which of the following?
A. Hepatic caeca
B. Rectum
C. Stomach
D. Gizzard

Q.58 Which of the following statement about chordates is true?
A. They are protostomes
B. All chordates are vertebrates
C. They lack a coelom
D. Their anus is formed from the blastopore

Q.59 Centipedes belong to class _____of arthropoda.
A. Arachnida
B. Insect
C. Cephalopoda
D. Myriapoda

Q.60 Which one is not the characteristic of Kingdom Animalia?
A. All animals are ingestive heterotrophs
B. It is largest kingdom
C. All animals are eukaryotes
D. All animals develop from the dissimilar gametes

61 What is the origin of the acoelomate gut?
A. Ectodermal
B. Mesodermal
C. Endodermal
D. None of these

).62 Which of the following animals is not a protostome?
A. Cockroach
B. Butterfly
C. Sting ray
D. Earthworm

Q.63 Radial symmetry is found in which of the following organisms?
A. Coelenterata and Platyhelminthes
B. Arthropoda and Mollusca
C. Porifera and Coelenterata
D. Coelenterata and Echinodermata

Q.64 Which one of the following animals is not a tetrapod?
A. Snake
B. Cow
C. Mantis shrimp
D. Human

Q.65 These animals have three germinal layers but no coelom:
A. Flat worms
B. Round worms
C. Cnidarians
D. Chordates

Q.66 Which of the following are motile zooids in cnidarians?
A. Polyps
B. Medusae
C. Both A and B
D. None of these

Q.67 The name animal is derived from what word?
A. Aname
B. Anima
C. Anemia
D. None of these

Q.68 Which of the following are the first groups of invertebrates which have developed a closed circulatory system?
A. Nematodes
B. Annelids
C. Arthropods
D. Molluscs

Q.69 Which statement is true about gastropods?
A. Body is bilaterally symmetrical
B. Both aquatic and land species breathe through lungs
C. Triploblastic and acoelomates
D. All of the above

Q.70 Excretory system of Platyhelminthes consists of which of the following?
A. Nephridia
B. Flame cells
C. Malpighian tubules
D. Nephrons

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Q.71 Which of the following organism has an eel like body?
A. Chondrichthyes
B. Osteichthyes
C. Cyclostomata
D. Both A and B

Q.72 Which combination of class and its description is correct?
A. Osteichthyes - a bony endoskeleton & gills covered by operculum
B. Reptilia - left aortic arch & internal fertilization
C. Nematoda - triploblastic & acoelomates
D. Cephalopods - dorsal nerve cord & bilateral symmetry

Q.73 *Ascaris* is characterized by which of the following?
A. Presence of true coelom and metamerism
B. Absence of tine coelom and metamerism
C. Presence of true coelom but the absence of metamerism
D. Absence of true coelom but the presence of metamerism

Q.74 Garden snail belongs to which class of Mollusca?
A. Gastropoda
B. Cephalopoda
C. Myriapoda
D. None of them

Q.75 The Venus flower basket is also known as which of the following?
A. *Sycon*
B. *Leucosolenia*
C. *Spongilla*
D. *Euplectella*

Q.76 S-band locomotion is characteristically seen in which of the following?
A. Bony fish
B. Fish like mammals
C. Cartilaginous fish
D. All of these

Q.77 Which group of animals is not a deuterostome?
A. Echinodermata
B. Arthropoda
C. Mollusca
D. Both A and C

Q.78 One similarity between annelids and arthropods:
A. Closed circulatory system
B. Nitrogenous waste product is uric acid
C. Ventral nerve cord
D. None of the above

Q.79 The pores through which water enters the sponge body are called:
A. Osculum
B. Ostia
C. Operculum
D. None of the above

Q.80 All of the following coelenterates show alternation of generation except?
A. *Hydra*
B. *Obelia*
C. *Aurelia*
D. All of these

Q.81 Both radial and bilateral symmetry is found in which of the following phylum?
A. Protozoa
B. Porifera
C. Echinodermata
D. All of these

Q.82 Phylum porifera is classified based on which of the following characteristic?
A. Branching
B. Symmetry
C. Spicules
D. Reproduction

Q.83 The outer body wall of sponges is made up of which cells?
A. Choanocytes
B. Pinacocytes
C. Mesenchymal cells
D. Cnidocytes

Q.84 Shell of egg is leathery in appearance in which of the following?
A. Amphibians
B. Prototherians
C. Birds
D. Reptiles

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Q.85 Which of following system is segmentally arranged in annelids?
A. Excretory system
B. Digestive system
C. Circulatory system
D. Nervous system

Q.86 One of these animals is a prototherian:
A. Green plants
B. Green algae
C. Animals
D. Both A and B

Q.87 The only aquatic arthropods:
A. Crustaceans
B. Arachnids
C. Myriapods
D. Gastropods

Q.88 In sponge's fertilization takes place in which of the following?
A. Ectoderm
B. Endoderm
C. Uterus
D. Mesenchyme

Q.89 Aschelminthes is also known as which of the following?
A. Protozoans
B. Eumetazoa
C. Protoctista ancestors
D. Nematodes

Q.90 Which of the following are believed to have common origin with annelids?
A. Nematodes
B. Arthropods
C. Molluscs
D. None of these

Q.91 Which of the following combinations is incorrect?
A. Nematoda - roundworms, pseudocoelomate
B. Arthropoda - coelom present, bilateral symmetry
C. Platyhelminthes - gastrovascular cavity, flatworms, acoelomate
D. Calcarea - gastrovascular cavity, coelom present

Q.92 Which statement correctly describes the alimentary canal of Hydra?
A. The alimentary canal is formed from the endodermal cells
B. The alimentary canal has a single opening
C. The alimentary canal is sac-like
D. All of these

Q.93 Nematoda is a taxon of the ranking:
A. Kingdom
B. Sub-kingdom
C. Phylum
D. Class

Q.94 Of the following which one is not included in Protostomes?
A. Arthropods
B. Hemichordates
C. Annelids
D. Molluscs

Q.95 Flame cells in *Planaria* constitute the:
A. Mechanoreceptors
B. Reproductive system
C. Respiratory system
D. Excretory system

Q.96 All the animals of the grade radiata are which of the following?
A. Unicellular
B. Triploblastic
C. Both A and B
D. Diploblastic

Q.97 Which of the following is not found in series proterostomia?
A. Annelida
B. Mollusca
C. Arthropoda
D. Echinodermata

Q.98 The outer body wall of sponges is made up of which cells?
A. Choanocytes
B. Pinacocytes
C. Mesenchymal cells
D. Cnidocytes

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Q.99 Water vascular system is present in coelom in which phylum:
A. Echinodermata
B. Annelida
C. Arthropoda
D. Cnidaria

Q.100 Which of the following is incorrect about annelida?
A. Triploblastic organization
B. Bilateral symmetry
C. Segmentation
D. Pseudocoelom

Q.101 The internal buds are known as which of the following?
A. Spicules
B. Choanocytes
C. Gemmules
D. Both A and B

Q.102 Cnidaria is characterized by which of the following?
A. Tissue level of organization
B. Coelenteron
C. Nematoblasts
D. All of these

Q.103 How is the body plan of a lobster similar to that of a whale?
A. Closed circulatory system
B. Mouth develops from the blastopore
C. A tubular digestive system with a mouth and an anus
D. The gut is not lined by coelomic epithelium .

Q.104 The nervous system of arthropods has:
A. A brain, a ventral nerve cord and several ganglia
B. A brain, a dorsal nerve cord and several ganglia
C. A brain, a dorsal and ventral nerve cord and several ganglia
D. A ventral nerve cord and several ganglia

Q.105 Aschelminthes is also known as which of the following?
A. Eumetazoa
B. Protoctista
C. Ancestors
D. Nematodes

Q.106 A sponge of Antarctica which is more than a meter tall is known as?
A. *Euplectella*
B. *Spongilla*
C. *Leucosolenia*
D. *Scolymastra joubini*

Q.107 Gut in pseudocoelomates is made from which of the following?
A. Ectoderm
B. Mesoderm
C. Endoderm
D. All of these

Q.108 Asymmetrical body is a feature of phylum:
A. Annelida
B. Arthropoda
C. Porifera
D. Cnidaria

Q.109 Carapace is present in which class of arthropoda?
A. Arachnids
B. Insects
C. Crustaceans
D. All of these

Q.110 All of the following are coelomates except which?
A. Deuterostomes
B. Hemichordates
C. Proterostomes
D. Aschelminthes

Q.111 Which system is present in nematodes?
A. Sac - like digestive system
B. Circulatory system
C. Respiratory system
D. Tube - like digestive system

Q.112 How are flat worms not similar to round worms?
A. They are both acoelomates
B. They are both worms
C. They are both triploblastic
D. They both show bilateral symmetry

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Q.113 Polychaeta have which of the following organs?
A. Tentacles
B. Palps
C. Eyes
D. All of these

Q.114 *Periplaneta* (cockroach) belongs to which phylum?
A. Mollusca
B. Annelida
C. Echinodermata
D. Arthropoda

Q.115 Radula is characteristic feature of:
A. Myriapods
B. Mollusca
C. Echinoderms
D. Cnidaria

Q.116 The body of which of the following organism is globular?
A. Cake urchin
B. Brittle star
C. Sea cucumber
D. Sea urchin

Q.117 Mantle in molluscs is present over which of the following regions?
A. Head
B. Dorsal muscular foot
C. Dorsal visceral foot
D. Both A and B

Q.118 A hydrostatic skeleton is:
A. Arthropods
B. Fishes
C. Annelids
D. Nematodes

Q.119 One similarity between annelids and arthropods:
A. Closed circulatory system
B. Nitrogenous waste product is uric acid
C. Ventral nerve cord
D. None of the above

Q.120 Animals like starfish have small groups of neurons in each arm connected to a rin of neurons in the centre.
This type of nervous system is called _____.
A. Centralized nervous system
B. Partially centralized nervous system
C. Diffuse nervous system
D. Partially diffuse nervous system

Q.121 Subkingdom parazoa includes:
A. Annelida
B. Cnidaria
C. Porifera
D. Protozoa

Q.122 Which class has the largest number of animals?
A. Fishes
B. Reptiles
C. Insects
D. Mammals

Q.123 Nephridia are the excretory organs of members of which phylum?
A. Arthropoda
B. Cnidaria
C. Annelida
D. Mollusca

Q.124 Aquatic arthropods respire through which of the following?
A. Gills
B. Spiracles
C. Book lungs
D. Both A and B

Q.125 Vertebrates belong to phylum chordata because:
A. They have a vertebral column
B. The brain is enclosed by the skull
C. The embryos have gills
D. The body develops from three germinal layers

Q.126 Coelom that develops from the archenteron as outpouching is?
A. Pseudocoelom
B. Enterocoelom
C. Schizocoelom
D. Both a and b

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Q.127 Aquatic arthropods belonging to this class breathe through gills:
A. Insects
B. Arachnids
C. Crustaceans
D. None of the above

Q.128 Salamander belongs to which of the following class?
A. Pisces
B. Aves
C. Reptiles
D. Amphibians

Q.129 The best function of coelom is described as:
A. To increase the size of the animals
B. To help in the functioning of reproductive system
C. To provide space for the development of organs and system
D. All of these

Q.130 Most multicellular organisms are which of the following?
A. Haploid
B. Diploid
C. Single nucleus
D. None of these

Q.131 Identify the characteristic of acoelomates?
A. Absence of mesoderm
B. Absence of brain
C. Coelom that is incompletely lined with a mesoderm
D. Solid body without a cavity surrounding internal organs

Q.132 Nervous system of nematodes consists of which of the following?
A. Ventral nerve cord
B. Dorsal nerve cord
C. Lateral nerve cord
D. All of these

Q.133 Which among the following is a diploblastic organism?
A. Hydra
B. Crabs
C. Squid
D. Earthworm

Q.134 Which of the following is an example of a tetrapod?
A. Flesh fly
B. Tarantula
C. Blue-ringed octopus
D. Hummingbird

Q.135 In most triploblasts after embryonic development the three layers are represented as?
A. Separate layers of cells
B. Structures formed from them
C. Their functions in body
D. Structures associated with them

Q.136 Lack of symmetry is identified in which group of animalia:
A. Protozoa
B. Porozoa
C. Parazoa
D. Coelomates

Q.137 Layer absent in diploblastic organisms:
A. Endoderm
B. Epidermis
C. Mesoderm
D. Ectoderm

Q.138 _____ do not perform photosynthesis:
A. Animals
B. Bacteria
C. Pine tree
D. *Spirogyra*

Q.139 It is a detritus feeder:
A. Leech
B. Earthworm
C. Hook worm
D. Pin worm

Q.140 Opossum, Kangaroo and Tasmanian wolf are examples of:
A. Metatheria
B. Prototheria
C. Eutheria
D. None of the above

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Q.141 Most flatworms are:
A. Endoparasite
B. Ectoparasite
C. Pesuodparasite
D. External parasite

Q.142 Which of the following system is segmentally arranged in annelids?
A. Excretory system
B. Circuatory system
C. Nervous system
D. Digestive system

Q.143 Which of the followings are characteristics of mollusca?
A. Segmented body
B. Closed circulatory system
C. Muscular foot
D. All of the above

Q.144 Polychaeta are present in:
A. Echinodermata
B. Annelida
C. Arthropoda
D. Mollusca

Q.145 One of these animals is prototheria:
A. Alligator
B. Spiny ant eater
C. Penguin
D. Porcupine

Q.146 In sponges fertilization takes place in which of the following?
A. Mesenchyme
B. Endoderm
C. Ectoderm
D. UterusWw

Q.147 Canal system in sponges develop due to which of the following?
A. Porous walls
B. Reproduction
C. Folding of inner walls
D. Gastrovascular system

Q.148 It is not a characteristics of kingdom animalia:
A. All animals are Ingestive heterotrophs
B. All animals are eukaryotes
C. It is largest kingdom
D. All animals develop from two dissimilar gametes

Q.149 Which one is non-cellular in most cases in animals?
A. Chlorenchyma
B. Mesoderm
C. Sclerenchyma
D. Mesenchyme

Q.150 *Sycon* is an example of:
A. Platyhelminthes
B. Annelida
C. Protozoa
D. Porifera

Q.151 Pinworm is a common used for which if the following?
A. *Rhabditis*
B. *Ancylostoma duodenale*
C. *Taenia solium*
D. *Enterobius vermicularis*

Q.152 Which of the following are modern day descends of theropoda dinosaurs?
A. Birds
B. Lions
C. Panther
D. Bears

Q.153 Chitinous setae are locomotary organs of annelids which are present on:
A. Cell wall
B. Prostomium
C. Nucleolus
D. Parapodia

Q.154 Porcupine is a mammals because:
A. Scales on its body are modified as spines for protection against predators
B. It lays eggs and has mammary glands
C. Fur on its body is modified as spines and it is warm blood
D. None of the above

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Q.155 It is considered a missing link between reptiles and birds:
A. Pterandon
B. Avimimus
C. Caudipteryx
D. Archaeopteryx

Q.156 Which is not a mammal?
A. Whale
B. Walrus
C. Shark
D. Seal

Q.157 Which of them excretes in form of uric acid?
A. Birds
B. Human
C. Frog
D. None of these

Q.158 Which of the following class of mammals is believed to have strong resemblance with reptile?
A. Metatheria
B. Eutheria
C. Prototheria
D. Both eutheria and prototheria

Q.159 Difference between chordates and hemichordates are:
A. Chordates are invertebrates
B. Chordates have well developed nervous system
C. Chordates have brain enclosed in skull
D. Chordates have symmetrical body

Q.160 Which phylum is considered the largest?
A. Arthropoda
B. Mollusca
C. Annelida
D. Platyhelminthes

Q.161 Which of the following is ancient fossil fuel?
A. Fish
B. Reptile
C. Bird
D. Amphibian

Q.162 In arthropods, body cavity is in the form of:
A. Coelom
B. Haemocoel
C. Pseudocoelom
D. Enteron

Q.163 Largest invertebrate is:
A. Squid
B. Octopus
C. Sycon
D. Jelly fish

Q.164 Jelly fish belong to:
A. Deuterostomes
B. Proterostomes
C. Triploblastic
D. Diploblastic

Q.165 Placenta develops in embryonic state in:
A. Prototheria
B. Metatheria
C. All mammals
D. Eutheria

Q.166 Largest vertebrates are:
A. Elephants
B. Whales
C. Sharks
D. Anacondas

Q.167 Which of the following pigment present in mollusca?
A. Haemocyanin
B. Haemoglobin
C. Myoglobin
D. None

Q.168 Ancestors to animals:
A. Protozoan
B. Algae
C. Slime molds
D. Bacteria

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Q.169 Which of the following are not amniotes?

A. Mammals and birds
B. Birds and reptiles
C. Reptiles and amphibians
D. Amphibians and fishes

Q.170 Cephalothorax is characteristic of:

A. Arthropods
B. Myriapods
C. Gastropods
D. None of these

Q.171 Arachnids have simple eyes. Which means:

A. Every eye has a single lens
B. Every eye has a simple lens
C. All eyes have a single lens
D. All eyes have simple lens

Q.172 Rhodophyta belong to:

A. Algae, Protista
B. Zygomycota, Fungi
C. Zooflagellates, Protista
D. Slime molds, Protista

Q.173 Many _____ expel large amount of water by special structures called contractile vacuoles:

A. Porifera
B. Fish
C. Echinoderm
D. Protozoa

ANSWER KEY

1	D	21	D	41	B	61	C	81	C	101	C	121	C	141	A	161	B
2	A	22	D	42	D	62	C	82	B	102	C	122	C	142	A	162	B
3	D	23	A	43	A	63	D	83	B	103	C	123	C	143	C	163	A
4	A	24	A	44	D	64	C	84	D	104	A	124	A	144	B	164	D
5	C	25	C	45	C	65	A	85	A	105	D	125	D	145	B	165	D
6	A	26	D	46	B	66	B	86	C	106	D	126	B	146	A	166	B
7	D	27	A	47	C	67	B	87	A	107	C	127	C	147	C	167	A
8	A	28	C	48	A	68	B	88	D	108	C	128	D	148	D	168	A
9	B	29	D	49	D	69	A	89	B	109	A	129	C	149	D	169	D
10	C	30	B	50	A	70	B	90	C	110	D	130	B	150	D	170	A
11	C	31	D	51	C	71	C	91	D	111	D	131	D	151	D	171	B
12	D	32	C	52	D	72	A	92	D	112	A	132	D	152	A	172	A
13	B	33	A	53	B	73	C	93	C	113	B	133	A	153	D	173	D
14	C	34	B	54	B	74	A	94	B	114	D	134	D	154	B		
15	C	35	D	55	D	75	D	95	D	115	B	135	B	155	D		
16	C	36	B	56	C	76	D	96	D	116	A	136	C	156	C		
17	B	37	A	57	A	77	A	97	D	117	C	137	C	157	A		
18	D	38	C	58	D	78	C	98	B	118	C	138	A	158	C		
19	D	39	D	59	D	79	B	99	A	119	C	139	B	159	B		
20	A	40	A	60	D	80	A	100	D	120	D	140	A	160	A		

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7 TOPIC ENZYMES PRACTICE EXERCISE

INTRODUCTION/CHARACTERISTICS OF ENZYMES

Q.1 The reaction will proceed faster if the activation energy is?
A. High
B. Low
C. Remains same
D. None of these

Q.2 The energy required to start a reaction is called?
A. Startup energy
B. Initial energy
C. Point energy
D. Activation energy

Q.3 An enzyme which requires a biological change in order to become active is called?
A. Transferase
B. Zymogen
C. Hydrogenase
D. Trypsin

Q.4 An enzyme without its cofactor is called:
A. Coenzyme
B. Apoenzyme
C. Holoenzyme
D. Proenzyme

Q.5 If the non-protein part of enzyme is covalently bonded to the enzyme it is known as?
A. Coenzyme
B. Activator
C. Cofactor
D. Prosthetic group

Q.6 Small organic, non-protein part that helps in enzyme reactions:
A. Co-factor
B. Catalyst
C. Activator
D. Prosthetic group

Q.7 An activated enzyme made up of a polypeptide with its cofactor is:
A. Substrate
B. Holoenzyme
C. Coenzyme
D. Apoenzyme

Q.8 Nicotinamide adenine dinucleotide is an example of:
A. Coenzyme
B. Holoenzyme
C. Cofactor
D. Apoenzyme

Q.9 Co-enzyme require:
A. Vitamins
B. Proteins
C. Fats
D. Carbohydrate

Q.10 Which of the following form weak linkage with enzyme?
A. Co-factor
B. Activator
C. Co-enzyme
D. Activator

Q.11 Co-factors are divided into groups:
A. 2
B. 3
C. 4
D. 4

Q.12 The substrate binds to specific region of enzyme called?
A. Key
B. Active site
C. Hyperactive site
D. None of these

Q.13 All enzymes are:
A. Globular proteins
B. Fibrous proteins
C. Glycoproteins
D. Lipoproteins

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Q.14 What does the active site of the enzyme determine?
A. Looks like a lump projection from the surface of an enzyme
B. Forms no chemical bond with substrate
C. Never changes
D. Determines by its structure the specificity of an enzyme

Q.15 Enzymes showing substrate specificity are specific to how many substrates?
A. 1
B. 3
C. 2
D. 4

Q.16 Which term is used to refer to an inactive enzyme precursor?
A. Apoenzyme
B. Null enzyme
C. Zymogen
D. Inhibitor

Q.17 Catalysts that increase the rate of biological chemical reaction are called:
A. Proteins
B. Vitamins
C. Enzymes
D. Minerals

Q.18 Which of the following best describes a coenzyme?
A. Covalently bonded non-protein part of an enzyme
B. Cofactor consists of metal ions
C. Loosely bonded non-protein part of an enzyme
D. Both A and B

Q.19 Which statement about enzyme is incorrect?
A. Some of them consist solely of protein with no non protein part
B. They catalyze a chemical reaction without being utilized
C. They without their cofactor are called apoenzyme
D. All enzymes are fibrous proteins

Q.20 Active form of an enzyme:
A. Coenzyme
B. Apoenzyme
C. Holoenzyme
D. Proenzyme

Q.21 A cofactor made of inorganic ion which is detachable is called?
A. Prosthetic group
B. Coenzyme
C. Activator
D. Cofactor

Q.22 Enzymes are globular proteins because:
A. They have a primary structure
B. They have a secondary structure
C. They have a tertiary structure
D. All of the above

Q.23 A small organic, non-protein molecule that carries chemical groups between enzymes is:
A. Cofactor
B. Catalyst
C. Substrate
D. Coenzyme

Q.24 Biological molecules which catalyze a biochemical reaction and remain unchanged after completion of reaction are called?
A. Cofactor
B. Coenzymes
C. Activator
D. Enzymes

Q.25 Enzymes bind with chemical reactant known as:
A. Product
B. Reactant
C. Substrate
D. All of these

Q.26 Which of the following vitamin acts as a coenzyme
A. Vitamin b
B. Vitamin b
C. Vitamin b

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Q.27 If the non-protein part of enzyme is covalently bonded to the enzyme it is known as?
A. Coenzyme
B. Prosthetic group
C. Cofactor
D. Activator

Q.28 Enzyme reacts with substrate to form:
A. Product
B. Active site
C. Binding site
D. Catalytic site

Q.29 Enzymes are _____ in nature:
A. Carbohydrates
B. Lipids
C. Nucleic acids
D. Proteins

Q.30 Which type of bond are never formed when substrate fits into active site of enzyme?
A. Hydrogen bonds
B. Ionic interactions
C. Covalent linkages
D. Hydrophobic interactions

Q.31 The mechanism of enzyme activation is referred to as:
A. Activation energy
B. Catalysis
C. Enzyme specificity
D. Denaturation

Q.32 The specificity of enzyme structure depends upon:
A. Active site
B. Allosteric site
C. Globe shape
D. All of these

Q.33 Catalytic activity takes place at:
A. Active site
B. Allosteric site
C. Regulatory site
D. All of these

Q.34 Which statement about active site is not true?
A. Active site is of spherical shape
B. Active site is nonspecific
C. Active site contains few amino acids
D. Active site converts substrate into product

Q.35 Type of bond present between enzyme and prosthetic group:
A. Hydrogen
B. Covalent
C. Ionic
D. Coordinate covalent

Q.36 Which one forms the raw material for coenzymes?
A. Vitamins
B. Carbohydrates
C. Lipids
D. Proteins

MECHANISM OF ACTION OF ENZYMES

Q.37 The lock and key model of enzyme action was proposed by:
A. Louis Pasteur
B. Emil Fischer
C. Daniel Koshland
D. Urey Miller

Q.38 The complex that forms when a substrate binds to enzyme is called:
A. Enzyme-substrate complex
B. Enzyme complex
C. Substrate complex
D. Structural complex

Q.39 Enzymes do not affect:
A. Substrate concentration
B. Product concentration
C. Both A and B
D. None

Q.40 Who proposed lock and key model of enzyme activity?
A. Emil Fischer
B. Daniel Koshland
C. Fredrick Sanger
D. James Watson

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Q.41 In the lock and key model of enzyme activity, the substrate acts as the:
A. Key
B. Lock
C. Both A and B
D. None of the above

Q.42 Enzymes work by which of the following?
A. Increasing the activation energy
B. Reducing the activation energy
C. Making exergonic reactions endergonic
D. Making endergonic reactions exergonic

Q.43 How many models are present for enzyme-substrate complex or reaction?
A. 3
B. 2
C. 4
D. 5

Q.44 Which statement is incorrect about Lock and Key Model?
A. Specific enzyme can transform only a specific substrate
B. Active site of an enzyme is a non-flexible structure
C. Active site does not change before during or even after the reaction
D. It explains the mechanism of every chemical reaction

Q.45 Which types of bond are never formed when a substrate fits into the active site of an enzyme?
A. Hydrogen bonds
B. Ionic interactions
C. Hydrophobic interactions
D. Covalent linkages

Q.46 Koshland in 1959 proposed the modified form of which of the following?
A. Unit membrane model
B. Fluid mosaic model
C. Reflective index model
D. Induced fit model

Q.47 Induced fit model was introduced by Koshland in which of the following year?
A. 1960
B. 1961
C. 1959
D. 1966

Q.48 Lock and key model was proposed by:
A. Koshland
B. Fischer
C. Krebs
D. Darwin

Q.49 Which of the following is false about concerning enzymes?
A. Substrates must bind the enzyme's active site in order to initiate its effects
B. Enzymes increase both the forward rate and reverse rate of a reaction
C. Enzymes are not destroyed in a reaction and can be used in the same reaction countless times
D. Enzymes increase the amount of product created in a reaction

Q.50 Number of substrate molecules converted into product by one molecule of enzyme active site per unit time is called?
A. Turnover number
B. Substrate number
C. Reaction number
D. None

Q.51 According to the induced fit model, what happens when an enzyme-substrate complex is formed?
A. The contact between the substrate and the enzyme causes a change in the shape of the active site
B. The shape of the substrate and the shape of the active site is complementary to each other
C. The substrate fits into the active site and forms bonds with the amino acids at the active site
D. All of these

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Q.52 What affect do enzymes have on the activation energy of a reaction?
A. Increases
B. Decreases
C. No affect
D. Increases or decreases depending upon individual enzyme

Q.53 While bound to the active site, the substrate is converted into which of the following?
A. Complex
B. Substrate of high energy
C. Product of reaction
D. Both A and B

Q.54 The primary function of cofactors is to?
A. Assist in enzyme synthesis
B. Assist in enzyme inhibition
C. Assist in enzyme activity
D. Both a and b

Q.55 In enzyme catalytic reaction the substrate is first converted to a high energy state called?
A. Transition state
B. High energy state
C. Activation state
D. Breaking point

Q.56 Allosteric enzymes consist of multiple:
A. Inhibitors
B. Polypeptide chains
C. Active sites
D. Temperature ranges

Q.57 Functions of enzymes include all of the following except:
A. Lessening the time required for a reaction to take place
B. Shifting substrates into more favorable positions in the active site
C. Decreasing the activation energy of a reaction
D. Shifting the equilibrium of a reaction

FACTORS EFFECTING RATE OF ENZYME ACTION

Q.58 Upon increasing the temperature the shape of enzyme's active site?
A. Remains same
B. Changes
C. Adopts a geometric conformation
D. Denatures

Q.59 The optimum pH for enzyme arginase is which of the following?
A. 9
B. 9.3
C. 9.7
D. 10

Q.60 The optimum pH for the functioning of the enzyme pepsin is?
A. 2
B. 3
C. 4
D. 5

Q.61 If we add more substrate to already occurring enzymatic reaction and it has no effect on the rate reaction, the process is called?
A. Denaturing
B. Saturation
C. Composition
D. Inhibition

Q.62 pH of salivary amylase is:
A. 6.8
B. 7.60
C. 2.00
D. 5.50

Q.63 It works in acidic medium:
A. Arginase
B. Pancreatic lipase
C. Catalase
D. Enterokinase

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Q.64 Extreme change in pH results in which of the following?
A. Change in ionization of amino acids at the active site of the enzyme
B. Change in the ionization of the substrate
C. Increase in the reaction rate
D. Denaturation of the enzyme

Q.65 What is meant by optimum temperature of an enzyme?
A. The temperature at which the primary structure of an enzyme remains intact
B. The temperature at which an enzyme makes the maximum amount of product
C. The temperature at which an enzyme may be more affected by an inhibitor
D. The temperature at which an enzyme makes the least amount of product

Q.66 Rate of reaction is double for rise of every _____.
A. 20 °C
B. 10 °C
C. 30 °C
D. 20 °C

Q.67 Which of the following strategies of enzymatic inhibition is used by noncompetitive inhibitors?
A. Bind to substrate so that it cannot bind to the active site
B. Target the enzyme for destruction using a protease
C. Bind to the active site and prevent substrate from binding
D. Bind to an allosteric site to cause a conformational shift in the enzyme

Q.68 If more substrate to an already occurring enzymatic reaction is added more enzyme activity is seen because?
A. There is probably more substrate present than there is enzyme
B. There is probably more product present than either substrate or enzyme
C. The enzyme substrate complex is probably failing to from during the reaction
D. There is probably more enzyme available than there is substrate

Q.69 The optimum pH for the functioning of pancreatic lipase is?
A. 9
B. 8
C. 7
D. 6

Q.70 A researcher has designed a new type of inhibitor that binds at the active site of an enzyme. What type of inhibition does this molecule display?
A. Uncompetitive inhibition
B. Competitive inhibition
C. Noncompetitive inhibition
D. All of these

Q.71 Which of the following changes could lead to loss of enzymatic function?
A. Decrease in activation energy of the reaction
B. Increase in enzyme concentration
C. Change in overall enthalpy of the reaction
D. Increase in pH of the reaction

Q.72 Which statement correctly describes why enzyme activity increases with increased enzyme concentration?
A. Collisions between enzyme and substrate molecules increase because of increased kinetic energy
B. Collisions between enzyme and substrate molecules increase because of increased heat energy
C. Collisions between enzyme and substrate molecules increase because of more active sites are available
D. Collisions between enzyme and substrate molecules increase because more substrate molecules are available

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Q.73 The rate of reaction of enzyme directly depends upon which of the following?
A. Low temperature
B. Amount of enzyme present at a specific time at unlimited substrate concentration
C. Maximum pH level
D. Nature of substrate

Q.74 The enzyme-substrate complex is formed in which part of the enzyme molecule?
A. Binding site
B. Allosteric site
C. Catalytic site
D. None of the above

Q.75 Which step, causes activation of catalytic site of an enzyme?
A. Change in pH of the surroundings
B. Change in the charge of the active site
C. Change in temperature
D. Formation of enzyme substrate site

Q.76 If the concentration of enzyme is kept constant and amount of substrate is increased a point is reached where increase in substrates concentration does not affect the reaction rate because of?
A. Enzymes get denatured at higher substrate cone
B. Rate of reaction is indirectly proportional to substrate concentration at this point
C. All the active sites on enzyme molecule are occupied
D. All of these

Q.77 What is the optimum temperature for working of enzymes in human body?
A. 32°C
B. 40°C
C. 37°C
D. 35°C

Q.78 In acidic medium, amino acids carry positive charge and acts as:
A. Acid
B. Base
C. Neutral
D. None of these

Q.79 If we increase the concentration of substrate then increase in the enzyme activity is due to which of the following?
A. There is sufficient concentration of enzyme
B. There is sufficient concentration of substrate
C. Active sites are not working properly
D. None of these

Q.80 When we increase the pH then, enzyme reactivity is retarded due to:
A. Tertiary structure of enzyme is destroyed
B. Primary structure is destroyed
C. Active sites get blocked
D. Allosteric modulation

Q.81 At low enzyme concentration, optimum pH and temperature, rate of reaction can be increased by:
A. Increased substrate concentration
B. Increasing pH
C. Increasing temperature
D. Increasing enzyme concentration

Q.82 Number of substrate molecules converted into product by one molecule of enzyme active site per unit is called:
A. Turn over number
B. Reaction number
C. Substrate number
D. None of the above

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ENZYME INHIBITION

Q.83 The effect of competitive inhibitor on enzyme activity is such that it affects which of the following?

A. Increases enzyme activity
B. Doesn't change enzyme activity
C. Decreases enzyme activity
D. None of these

Q.84 What is the characteristic of a non-competitive inhibitor?

A. Always binds at the active site
B. Adding more substrate reduces the effects of inhibition
C. Sometimes binds at the active site
D. Adding more substrate does not reduce the effects of inhibition

Q.85 Reversible inhibitors form weak linkages with which of the following?

A. Enzyme
B. Reactant
C. Product
D. Substrate

Q.86 Inhibitors which block the enzyme by forming weak bond are called:

A. Competitive inhibitors
B. Non-competitive inhibitors
C. Irreversible inhibitors
D. Both A and B

Q.87 Reversible inhibitors form weak linkages with which of the following?

A. Enzyme
B. Reactant
C. Product
D. Substrate

Q.88 The end product of an enzymatic reaction inhibits formation of product in an earlier step. This type of enzymatic regulation is known as?

A. Allosteric regulation
B. Negative regulation
C. Metabolic pathway loop
D. Feedback inhibition

Q.89 In uncompetitive inhibition, the inhibitor binds with:

A. Enzyme
B. Substrate
C. ES-complex
D. All of these

Q.90 In mixed inhibition, the allosteric affects:

A. Shape of substrate
B. Shape of inhibitor
C. Shape of enzyme
D. None of these

Q.91 The non-substrate molecules that bind to the allosteric sites are called?

A. Inhibitors
B. Reactants
C. Allosteric substrates
D. Allosteric modulators

Q.92 A chemical substance which can react (in place of substrate) with the enzyme but is not transformed into product/s and thus blocks the active site temporarily or permanently is called?

A. Coenzyme
B. Blocker
C. Inhibitor
D. Cofactor

Q.93 Malonic acid is an example of which type of inhibitors?

A. Malonic acid is an example of which type of inhibitors?
B. Reversible inhibitor
C. Non-competitive inhibitor
D. Competitive inhibitor

Q.94 In non-competitive inhibition, the quantity which remains same as the reaction proceed is?

A. Vmax
B. Km
C. Ko
D. Vo

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Q.95 A substance which binds at the active site of the enzyme but does not result in the formation of the products is called:
A. Irreversible inhibitor
B. Reversible inhibitor
C. Non-competitive inhibitor
D. Competitive inhibitor

Q.96 An inhibitor is added, disrupting the function of a particular enzyme. The experimenter adds more substrate, and enzyme function increases again. These results indicate the involvement of what type of inhibitor?
A. Non-competitive
B. Uncompetitive
C. Allosteric
D. Competitive

Q.97 What is meant by enzyme denaturation?
A. Peptide bonds between amino acid residues are broken
B. The enzyme loses its secondary structure
C. The enzyme loses its tertiary structure
D. All of the above

Q.98 The effect of competitive inhibitor on enzyme activity is such that it affects which of the following?
A. Increases enzyme activity
B. Doesn't change enzyme activity
C. Decreases enzyme activity
D. None of these

Q.99 The non-substrate molecules that binds to the allosteric sites are called?
A. Inhibitors
B. Reactants
C. Allosteric substrates
D. Allosteric modulators

Q.100 Which of the following best describes competitive inhibitors?
A. Do occupy active site
B. Destroy the structure of enzyme
C. Resemble structurally with substrate
D. None of the above

Q.101 _____ is a competitive inhibitor of succinic dehydrogenase.
A. Malonic acid
B. Malic acid
C. Fumaric acid
D. Acetic acid

Q.102 In competitive inhibition, a thing that binds to enzyme active site are?
A. Substrate
B. Catalyst
C. Inhibitors
D. Both A and B

Q.103 Feedback inhibition in most metabolic pathways involves which type of enzymes?
A. Holoenzymes
B. Allosteric enzymes
C. Coenzymes
D. Apoenzyme

Q.104 These form weak linkages with enzymes:
A. Irreversible inhibitors
B, Reversible inhibitors
C. Both A and B
D. None

Q.105 In uncompetitive inhibition, the inhibitor binds with:
A. Enzyme
B. Substrate
C. ES complex
D. All of these

Q.106 An allosteric enzyme will have:
A. Many active sites
B. Many substrates
C. Many binding sites
D. No binding site

Q.107 In mixed inhibition, the inhibitor binds to:
A. Allosteric site
B. Active site
C. Binds to substrate
D. Does not bind to enzyme

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Q.108 Competitive inhibitors _____ enzyme activity.
A. Decrease
B. Increase
C. Does not affect
D. None

Q.109 Structure of enzyme is altered by:
A. Competitive inhibitor
B. Non- competitive inhibitor
C. Irreversible inhibitor
D. Reversible inhibitor

Q.110 In competitive inhibition, two things attached to enzyme's active site are:
A. Inhibitor
B. Substrate
C. Both A and B
D. None of these

Q.111 The structure of an enzyme is altered by which of the following inhibitors?
A. Reversible inhibitor
B. Competitive inhibitor
C. Non-competitive inhibitor
D. Irreversible inhibitor

OUT OF THE SYLLABUS

Q.112 This enzyme is used to cut DNA molecule in rDNA technology
A. Ligase
B. Phosphatase
C. Ribonuclease
D. Restriction enzyme

Q.113 Restriction endonucleases found in
A. Viruses
B. Bacteria
C. Eukaryotes
D. All of these

Q.114 Antibodies can be digested by using which of the following types of enzymes?
A. Lipase
B. Protease
C. Amylase
D. Polymerase

Q.115 Ligases help in which of the following reactions?
A. Splitting of two molecules
B. Oxidation of molecules
C. Joining of molecules
D. Both A and B

Q.116 What type of enzymes is involved in biological oxidation?
A. kinases
B. Dehydrogenases
C. Polymerases
D. Phosphatases

Q.117 Which of the following is not a class of enzyme?
A. Ligase
B. Isomerase
C. Hydrolase
D. Pyrimidine complex

Q.118 Enzymes which are involved in transfer of electrons are known as:
A. Oxidases
B. Dehydrogenase
C. Hydrolyses
D. Both A and B

Q.119 The following enzymes are regulated by calcium ions:
A. DNA polymerase
B. Nitric oxide synthetase
C. Adenylate cyclase
D. Phosphoprotein phosphatase

Q.120 Enzyme which helps in changing the shape of molecule is called:
A. Ligases
B. Dehydrogenases
C. Hydrolyses
D. Isomerases

Q.121 Phosphoglyceromutases are example of:
A. Lyases
B. Hydrolases
C. Ligases
D. Transferases

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ANSWER KEY

1	B	21	C	41	B	61	B	81	D	101	A	121	D
2	D	22	C	42	B	62	A	82	A	102	C		
3	B	23	D	43	B	63	D	83	C	103	B		
4	B	24	D	44	D	64	D	84	D	104	B		
5	D	25	C	45	D	65	B	85	A	105	C		
6	A	26	D	46	D	66	B	86	A	106	C		
7	B	27	B	47	C	67	D	87	A	107	A		
8	A	28	A	48	B	68	A	88	D	108	A		
9	A	29	D	49	B	69	A	89	A	109	B		
10	C	30	D	50	A	70	B	90	C	110	B		
11	B	31	B	51	A	71	D	91	A	111	D		
12	B	32	A	52	B	72	C	92	C	112	D		
13	A	33	A	53	C	73	B	93	D	113	B		
14	D	34	B	54	C	74	A	94	B	114	B		
15	A	35	B	55	A	75	D	95	D	115	C		
16	C	36	A	56	B	76	C	96	D	116	B		
17	C	37	B	57	B	77	C	97	D	117	D		
18	C	38	A	58	D	78	B	98	C	118	D		
19	D	39	D	59	C	79	A	99	A	119	B		
20	C	40	A	60	A	80	A	100	C	120	D		

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8 TOPIC EVOLUTION PRACTICE EXERCISE

CONCEPTS OF EVOLUTION

Q.1 The process that has transformed life on earth from its earliest forms to vast diversity is?

A. Mutation
B. Evolution
C. Migration
D. Genetic drift

Q.2 Concept of evolution was first presented by which of the following scientists?

A. Lamarck
B. Aristotle
C. Wallace
D. Darwin

Q.3 Earliest life form on earth is:

A. Virion
B. Viroid
C. Prion
D. None

Q.4 During Aristotle time, it was thought that:

A. Organisms ranged from simple to complex
B. One type of organism give rise to another type of organism
C. Both A and B
D. All living things specially created by nature

Q.5 *Methanopyrus kandleri* is an organism which lives in a hydrogen-carbon dioxide environment, and was first discovered in a hydrothermal vent where temperatures reached 230°F. What sort of organism is this?

A. Protist
B. Cyanobacteria
C. Archaea
D. Bacteria

Q.6 Flagella might have arisen through the ingestion of which of the following?

A. Cyanobacteria
B. Chlamydomonas
C. Paramecium
D. Spirochetes

Q.7 Carolus Linnaeus was believer of which of the following?

A. Special creation
B. Catastrophism
C. Natural selection
D. Inheritance of acquired characters

Q.8 Which of the following is not an example of evidence supporting the endosymbiotic theory?

A. Mitochondria and other plastids multiply by binary fission
B. Mitochondria contain their own DNA, which is a single circular chromosome
C. Mitochondria have their own ribosomes, which are 70s
D. None of these

Q.9 Two populations of the same species over time grow distant from one another. At what point will these two populations be considered different species?

A. When the populations begin to eat different foods
B. When there is a physical barrier, such as a river
C. When the two populations have not been in contact with one another for two hundred years
D. When they are no longer able to interbreed

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Q.10 Which scientist does not match his achievements in the following options?
A. Lamarck published his theory of evolution
B. Lyell published principles of geology
C. Malthus published essay on principle of population
D. Cuvier published papers on inheritance

Q.11 The process by which different kinds of living organism are believed to have developed from earlier forms during the history of the earth:
A. Evolution
B. Development
C. Growth
D. None of the above

Q.12 He explained earth's history by catastrophism:
A. Cuvier
B. Lyell
C. Malthus
D. Lamarck

Q.13 Eukaryotes evolved by prokaryotes through:
A. Commensalism
B. Symbiosis
C. Predation
D. All of the above

Q.14 Who wrote an essay on population?
A. Malthus
B. Darwin
C. Mendel
D. Wallace

Q.15 Lamarck was in-charge of the Natural History Museum in:
A. North America
B. Paris
C. England
D. Wales

INHERITANCE OF ACQUIRED CHARACTERISTICS

Q.16 Which condition can be explained by Lamarckism?
A. How giraffes got their long neck
B. How humans lost their tail
C. How humans became bipedal
D. All of these

Q.17 Which of the following scientists hypothesized that organisms can pass down acquired traits during their lifetimes?
A. Lamarck
B. Linnaeus
C. Darwin
D. Mendel

Q.18 Lamarck's ideas on biological evolution contained correct and incorrect notions. Which of his ideas is correct?
A. Acquired traits can be passed on to offspring
B. Living forms become perfect with time
C. Nervous fluids are passed on from generation to generation
D. Evolution is related to changes in adaptation to the environment

Q.19 The idea of inheritance of acquired characteristics was given by:
A. Lamarck
B. Darwin
C. Aristotle
D. Lyell

Q.20 What are parts of Lamarck's theory of evolution?
A. Individuals lose traits that they don't need
B. Acquired characteristics are heritable
C. Individuals gain characteristics they need
D. All of these

Q.21 Which of the following are important points of Lamarck's theory?
A. Use and disuse of organs
B. Inheritance of acquired characters
C. Natural selection
D. Both A and B

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Q.22 Which scientists gave postulate that giraffes have long necks because they wanted eat the leaves of tall trees?
A. Watson and Crick
B. Lamarck
C. Darwin
D. All of these

Q.23 Who hypothesized that organisms evolved through inheritance of acquired characters
A. Darwin
B. Hutton
C. Malthus
D. Lamarck

Q.24 Which of the following can be described by Lamarckism?
A. How giraffe got their long neck?
B. How humans lost their tails?
C. How humans became bipedal?
D. All of these

Q.25 Use and disuse organ theory was proposed by:
A. Lamarck
B. Darwin
C. Wallace
D. TH Morgan

DARWINISM

Q.26 Natural selection can amplify or diminish variations that are?
A. Heritable
B. Non heritable
C. Both a and b
D. Acquired

Q.27 Who developed a theory of natural selection essentially identical to Darwin's?
A. Hardy-Weinberg
B. Malthus
C. Lamarck
D. Alfred Wallace

Q.28 Darwin was greatly influenced by:
A. Essay on population by Malthus
B. Lamarck's theory
C. L-Miller's evidence for origin of life
D. Mendel's paper on inheritance

Q.29 Darwin's theory mainly focuses on:
A. Origin of life
B. How organs extinct
C. How new species arise
D. How organisms form

Q.30 Which theory tells about adaptation:
A. Darwin's natural selection
B. Lamarck's theory
C. Hardy
D. Weinberg's principle

Q.31 Island present near South American cost line:
A. Maldives
B. Madagascar
C. Galapagos
D. New Zealand

Q.32 Darwin returned to great Britain in:
A. 1831
B. 1855
C. 1836
D. 1841

Q.33 Natural selection was the silent feature of which statement:
A. Lamarck
B. Darwin
C. Aristotle
D. Wallace

Q.34 Darwin collected how many types of finches?
A. 12
B. 13
C. 14
D. 15

DARWIN'S THEORY EVOLUTION

Q.35 Darwin's Theory of evolution by natural selection is based on all of the following postulates except:
A. Some individuals are more successful in surviving and reproduction than others
B. Individuals within a population are variable
C. The survival and reproduction of individuals is not random
D. The survival and reproduction of individuals is random

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Q.36 Darwin described his theory of natural selection as which of the following?
A. Punctuated equilibrium
B. Survival of the fittest
C. Inheritance of acquired characteristics
D. Descent with modification

Q.37 Who developed a theory of natural selection essentially identical to Darwin's?
A. Hardy-Weinberg
B. Malthus
C. Lamarck
D. Allred Wallace

Q.38 Darwin gave his theory of evolution in:
A. 1859
B. 1822
C. 1884
D. 1913

Q.39 Galapagos finches indicated:
A. Seasonal migration
B. Immigration
C. Allopatric speciation
D. Parapatric speciation

Q.40 During which of the following levels of biological organization can natural selection occur?
A. Gene
B. Individual
C. Group
D. All

Q.41 Which of the following would best determine the fitness of an organism?
A. The number of offspring produced by the organism. X
B. How much food the organism consumes in its lifetime
C. How large the organism grows
D. The number of offspring produced by the organism's own offspring

Q.42 Which organism would be considered the most biologically fit?
A. Lives 45 years and produces 3 offspring
B. Lives 70 years and produces no offspring
C. Lives 27 years and produces 1 offspring
D. Lives 36 years and produces 6 offspring

Q.43 The book name in which Darwin published the theory of evolution:
A. The origin of species by natural selection
B. The origin of species
C. The evolution of species
D. The evolution of species by means of natural selection

.44 What is the definition of "fitness" in terms of evolution?
A. The organism's ability to attain resources while in competition with other organisms of its species
B. The organism's ability to attract the most mates
C. The organism's health
D. The ability of an organism to contribute its genes to future generations

45 The ability to pass on genes is defined as which of the following?
A. Differential reproduction
B. Fitness
C. Evolution
D. Natural selection

6 Darwin' theory was based on:
A. Mutation
B. Migration
C. Natural selection
D. None of the above

7 The beats definition of natural selection is:
A. Survival of the fittest
B. Most fit individuals adapt to their environment better than less fit individuals
C. Those who eat better are healthier and love longer are most fit within a population
D. Preservation of traits leads to increase survival and reproduction

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Q.48 Darwin's theory can be named as:
A. Classical theory
B. Advanced theory
C. Neo-Darwinism
D. Theory of special creation

Q.49 Specifics of natural selection are:
A. Regional and permanent
B. Local and constant
C. Regional and temporary
D. Both A and B

NEO-DARWINISM'S

Q.50 Neo-Darwinism has integrated discoveries and ideas from:
A. Genetics
B. Paleontology
C. Taxonomy
D. All of these

Q.51 Neo-Darwinism came on to surface during:
A. 1930's
B. 1940's
C. 1920's
D. 1950's

EVIDENCE OF EVOLUTION

Q.52 Homology means:
A. Similarity in characteristics resulting from common ancestors
B. Similarity in function from acquired characters
C. Study of similar organs but with different functions
D. Study of similar organs but with different functions

Q.53 If two species have similar proteins and genes it means:
A. They have same organs.
B. They have similar appearance
C. They have common ancestors
D. All of above

Q.54 Which of the following is not an evidence for evolution?
A. Fossil record
B. Common ancestor organisms
C. Vestigial structures
D. None of these

Q.55 Most of the fossils are found in which of the following?
A. Metamorphic rocks
B. Soil
C. Volcanic mountains
D. Sedimentary rocks

Q.56 Structures that were once functional in the past but no longer serve a purpose due to evolutionary adaptations and physiological changes are referred to as?
A. Vestigial
B. Analogous structures
C. Homologous structures
D. None of these

Q.57 Which type of evolution is represented by analogous organs?
A. Divergent evolution
B. Straight evolution
C. Zig-zag evolution
D. Convergent evolution

Q.58 It is not a vestigial organ in humans:
A. Appendix
B. Coccyx
C. Both A and B
D. None of the above

Q.59 Homologous organs show similarity in:
A. Shape
B. Origin
C. Function
D. Size

Q.60 Which of the following is ancient fossil fuel?
A. Fish
B. Reptile
C. Bird
D. Amphibian

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Q.61 **Embryo of a turtle, mouse and human show:**
A. Comparative embryology
B. Distinct differences
C. Vestigial organs
D. Analogous structure

Q.62 **The structures of the front flipper of a whale and the forearm of a wolf have similar bone structure and derive from a common ancestor. This is an example of which of the following?**
A. Convergent evolution
B. Analogous structures
C. Homologous structures
D. Bottleneck effect

Q.63 **Example of convergent evolution is:**
A. Forelimbs of man and bat
B. Wings of birds and insects
C. Darwin's finches
D. All

Q.64 **Study of fossils is called:**
A. Mammalogy
B. Palaeontology
C. Herpetology
D. Ornithology

Q.65 **Which of the following organs serve no apparent purpose?**
A. Non vestigial organs
B. Homologous organs
C. Analogous organs
D. Vestigial organs

Q.66 **The wings of a bird and the wings of a beetle are considered?**
A. Taxonomic
B. Phylogenetic
C. Homologous
D. Analogous

Q.67 **Which statement is incorrect?**
A. Homologous organs are functionally different but structurally alike
B. Examples of homologous structures are of cat, flipper of whale
C. Examples of analogous structures are wings of bats, birds and insects
D. Analogous organs are functionally different but structurally alike

Q.68 **In humans gill pouches have evolved into which of the following organs?**
A. Nose
B. Ear
C. Pharynx
D. Eustachian tubes

Q.69 **Which of the following is not an evidence for evolution?**
A. Fossil record
B. Vestigial structures
C. Common ancestor organisms
D. None of these

OUT OF THE SYLLABUS

Q.70 **Mating with non-relatives is known as?**
A. Inbreeding
B. Outbreeding
C. Breeding
D. None of these

Q.71 **A population of birds encounters a dramatic event that results in a severe decrease in population size. As a result of the newly-decreased population, what type of genetic drift does this population now exhibit?**
A. Artificial selection
B. Founder effect
C. Bottleneck effect
D. both a and b

Q.72 **When resources get scarce, the population growth?**
A. Becomes fast
B. Slows down
C. Remains same
D. None of these

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Q.73 Which statement best describes the Hardy-Weinberg principle?
A. Recessive alleles eventually disappear in large populations
B. Expected frequencies of alleles are impossible to predict mathematically
C. Dominant alleles become more prevalent in laarge populations
D. When there is a large population, the mechanism of inheritance does not change allele frequencies.

Q.74 Adaptation of traits to better fill a niche is known as which of the following?
A. Polymorphism
B. Gene linkage
C. Specialization
D. Replication

Q.75 Which of the following may cause loss of alleles from a gene pool?
A. Interbreeding
B. Mutation
C. Migration
D. None

Q.76 As long as two species occupy different niches, there is:
A. Competition
B. No competition
C. Gene linkage
D. Polymorphism

Q.77 Two species can avoid competition and better use the environment's resources by occupying different?
A. Adaptations
B. Polymorphism
C. Niches
D. Specialization

Q.78 According to Hardy-Weinberg theorem, frequencies of alleles and genotypes in a population's gene pool remain?
A. Mobile in gene pool
B. Constant
C. Stationary in gene pool
D. Constant unless acted upon by agents other than sexual recombination

Q.79 Bottleneck increases the effect of which of the following:
A. Genetic linkage
B. Genetic expression
C. Genetic diversity
D. Gene pool

Q.80 Which of the following conditions is not required to be true for a population in Hardy-Weinberg equilibrium?
A. Random mutations
B. Large population
C. No natural selection
D. Random mating

Q.81 Population growth is checked by which of the following?
A. No competition
B. No polymorphism
C. Polymorphism
D. Competition

Q.82 Primordial soup is a set of hypothetical conditions on ancient earth first proposed by?
A. Dmitri Ivanovsky
B. Dmitry Anuchin
C. Nikolay Shatsky
D. Alexander Oparin

Q.83 The ultimate source of all the change is?
A. Migration
B. Mutation
C. Genetic drift
D. Selection

Q.84 The frequency of allele if it is evolutionary successful is?
A. Increased
B. Decreased
C. No change
D. None of these

Q.85 When two or more clearly different phenotypes exists in same population of species, the phenomenon is called?
A. Replication
B. Polymorphism
C. Gene linkage
D. Gene expression

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Q.86 Mating between relatives is called which of the following?

A. Inbreeding
B. Ex breeding
C. Breeding
D. Outbreeding

Q.87 The selection for a trait on one extreme is called which of the following?

A. Natural selection
B. Stabilizing selection
C. Directional selection
D. All of these

ANSWER KEY

1	B	21	D	41	A	61	A	81	D
2	B	22	B	42	D	62	C	82	D
3	D	23	D	43	B	63	B	83	B
4	A	24	D	44	D	64	B	84	A
5	C	25	A	45	B	65	D	85	B
6	D	26	A	46	C	66	D	86	A
7	A	27	D	47	B	67	D	87	D
8	D	28	A	48	A	68	D		
9	D	29	C	49	C	69	D		
10	D	30	A	50	D	70	B		
11	A	31	C	51	B	71	B		
12	A	32	C	52	A	72	B		
13	B	33	B	53	C	73	D		
14	A	34	C	54	D	74	C		
15	B	35	D	55	D	75	C		
16	A	36	D	56	A	76	B		
17	A	37	D	57	D	77	C		
18	D	38	A	58	D	78	D		
19	A	39	C	59	B	79	C		
20	D	40	B	60	A	80	A		

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9 TOPIC

LIFE PROCESSES IN ANIMALS & PLANTS (NUTRITION/GASEOUS EXCHANGE/ TRANSPORT)

PRACTICE EXERCISE

CARNIVOROUS PLANTS/PARASITIC NUTRITION (PITCHER PLANT, VENUS FLY TRAP, SUNDEW)

Q.1 The venous flower basket is also known as which of the following?
A. *Sycon*
B. *Leucosolenia*
C. *Spongilla*
D. *Euplectella*

WATER AND MINERAL UPTAKE BY ROOTS, XYLEM AND PHLOEM

Q.2 The upward movement of sap by the xylem is:
A. Ascent of sap
B. Plasmolysis
C. Deplasmolysis
D. Guttation

Q.3 The attraction between water molecules and cell wall of xylem is termed as:
A. Cohesion
B. Tension
C. Adhesion
D. Imbibition

Q.4 Deficiency of which element causes yellowing in plants?
A. Magnesium
B. Iron
C. Chlorine
D. Oxygen

Q.5 Which of the following is incorrect for ascent of sap?
A. Water potential
B. Cohesion tension
C. Root pressure
D. Imbibition

Q.6 Stomata cover only what portion of the leaf surface?
A. 10%
B. 50%
C. 1-2%
D. 0.3 to 0.4%

Q.7 Which cells regulate the opening and closing of stomata?
A. Neutrophils
B. Basophils
C. Guard cells
D. Mesophyll cells

Q.8 Water vapors exit and carbon dioxide enters a leaf through:
A. Stomata
B. Grana
C. Porphyrin ring
D. Photons

Q.9 Which of these cells is not present in phloem?
A. Companion cell
B. Sieve tube cells
C. Vessels
D. Parenchyma

Q.10 The absorption of water through a compound without dissolving in it is known as:
A. Ascent of sap
B. Plasmolysis
C. Imbibition
D. Guttation

Q.11 The loss of liquid via the hydathodes is called:
A. Imbibition
B. Guttation
C. Plasmolysis
D. None of these

Q.12 Multisensory hydraulic valves are:
A. Stomata
B. Lenticels
C. Guard cells
D. Hydathodes

Q.13 Who proposal starch sugar hypothesis?
A. Sager
B. Dixon
C. Mohl
D. Drabs

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Q.14 The movement of minerals or water via extracellular pathway is known as:
A. Symplast
B. Apoplast
C. Vascular
D. None of these

Q.15 Casparian strips are found in:
A. Epidermis
B. Endodermis
C. Cortex
D. Vascular bundle

Q.16 Guttation is caused due to:
A. Suppression of transpiration
B. Humidity
C. Root pressure
D. None

Q.17 Pressure flow theory was proposed by:
A. Ernst Munch
B. Van Neil
C. Hans Krebs
D. TH Morgan

OSMOTIC PRESSURE/POTENTIAL

Q.18 In osmosis water molecules move from area of:
A. Higher solute concentration to lower solute concentration
B. Lower solvent concentration to higher solvent concentration
C. Lower solute concentration to higher solute concentration
D. All of these

Q.19 The external solution having more concentration then the cell sap is known as:
A. Hypertonic solution
B. Hypotonic solution
C. Isotonic solution
D. Isotonic solution

Q.20 The total kinetic energy of water molecules is known as:
A. Water potential
B. Pressure potential
C. Osmotic potential
D. None of these

CARDIOVASCULAR SYSTEM (INCLUDING HUMAN HEART STRUCTURE, BLOOD VESSELS)

Q.21 The osmotic pressure of blood is maintained by
A. Membrane proteins
B. Fibrous proteins
C. Plasma proteins
D. Myosin

Q.22 The number of stages involved in the heart beat is?
A. 2
B. 3
C. 4
D. 5

Q.23 The function of spleen is to filter_____.
A. Blood
B. Amniotic fluid
C. Semen
D. Lymph

Q.24 A 25 years old female with chronic fatigue was diagnosed with iron deficiency anemia and low blood count what is the cause of her fatigue?
A. Reduction in amount of Fe-S centers
B. Lowered production of water from the electron transport chain that cause dehydration
C. Iron is important for electron transport chain
D. Iron is important for NADH production

Q.25 Which of these is common in both lymph vessels and veins?
A. Both have small bore
B. Both have valves
C. Both have low blood pressure
D. Both are communicated

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Q.26 Which one is thickest?
A. Left ventricle
B. Right ventricle
C. Left auricle
D. Right auricle

Q.27 Chordae tendineae are present in:
A. Aorta
B. Atrium
C. Ventricle
D. Vena cava

Q.28 Blood is collected from legs by:
A. Hepatic vein
B. Vena cava
C. Renal vein
D. Iliac veins

Q.29 The number of RBCs at high altitude will:
A. Increase in size
B. Increase in number
C. Decrease in size
D. Decrease in number

Q.30 A circulatory system has --------- characteristics.
A. 1
B. 2
C. 3
D. 6

Q.31 Pressure is highest in:
A. Aorta
B. Arteries
C. Capillaries
D. Arterioles

Q.32 Papillary muscles extension are responsible for:
A. Bicuspid constriction
B. Tricuspid constriction
C. Mitral constriction
D. All of these

Q.33 _____ is a macromolecule found in blood.
A. Hemoglobin
B. Plasma
C. Creatinine
D. Plasmids

Q.34 Heart is enclosed in:
A. Pericardium
B. Plural membrane
C. Mesentery
D. Epimysium

Q.35 Pulse is found in:
A. Arteries
B. Capillaries
C. Veins
D. Both A and B

Q.36 Iliac arteries supply blood to:
A. Stomach
B. Large intestine
C. Esophagus
D. Gonads

RESPIRATORY SYSTEM

Q.37 The cluster of pouches opened from alveolar ducts is known as:
A. Bronchi
B. Bronchioles
C. Pharynx duct
D. Alveoli

Q.38 Which of the following is not respiration?
A. Breakdown of glucose
B. Formation of glucose
C. Release of energy
D. Exchange of gases

Q.39 A muscular passage that is common to both food and air is known as:
A. Bronchi
B. Bronchioles
C. Larynx
D. Pharynx

Q.40 The process of intake of oxygen and release of carbon dioxide is known as:
A. Respiratory exchange
B. Gaseous exchange
C. Diffusion
D. Osmosis

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Q.41 Air contains what percentage of carbon dioxide?
A. 0.02-0.03
B. 0.03-0.04
C. 0.04-0.05
D. 0.05-0.06

Q.42 Which of these is functional unit of lungs?
A. Air sacs
B. Alveoli
C. Bronchi
D. Bronchioles

Q.43 What is correct about myoglobin?
A. It is iron containing protein pigment
B. It occurs in muscle fibres
C. It also stores some oxygen
D. All of these

Q.44 What is the intermediate part of the respiratory system between trachea and pharynx?
A. Glottis
B. Voice box
C. Bronchi
D. A and B

Q.45 Pleural membranes cover:
A. Brain
B. Heart
C. Kidneys
D. Lungs

Q.46 The flap like structure found on larynx is called:
A. Glottis
B. Vocal cords
C. Larynx
D. Epiglottis

Q.47 Lungs are porous due to the presence of:
A. Bronchi
B. Alveoli
C. Terminal bronchiole
D. Respiratory bronchiole

Q.48 Pick the odd one out:
A. Heart
B. Life
C. Kidney
D. Lungs

Q.49 The covering of lungs is termed as:
A. Pleural membrane
B. Myocardium
C. Pericardium
D. Both B and C

Q.50 The space inside the chest cavity during inspiration is:
A. Decreased
B. Increased
C. Remains same
D. First increased then decreased

Q.51 Which is not true about human lungs?
A. They are opened sacs
B: They are closed sacs
C. They are spongy in nature
D. They are placed in chest cavity

Q.52 The function of vocal cords is to help in:
A. Voice production
B. Energy production
C. Glucose production
D. Air production

Q.53 The factor which affect the oxygen saturation of hemoglobin:
A. CO_2
B. Temperature
C. pH of blood
D. All of these are correct

Q.54 Intercostal muscles are found in:
A. Ribs
B. Pharynx
C. Lungs
D. Both B and C

Q.55 Amount of oxygen in inspired air is 21 % while in expired air is:
A. 0.11
B. 0.12
C. 0.15
D. 0.16

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Q.56 The wall of chest cavity is composed of:
A. Intercostal muscles
B. ribs
C. Both and A and B
D. Diaphragm

Q.57 A surfactant plays its role by:
A. No effect on surface tension
B. Increasing surface tension
C. Decreasing surface tension
D. None of these

Q.58 The cartilage protects the trachea from:
A. Collapsing
B. Vibrating
C. Swelling
D. Breaking

Q.59 The thick muscular structure which is present below the pair of lungs is known as:
A. Pharynx
B. Diaphragm
C. Bronchi
D. None of these

Q.60 The floor of the chest is called:
A. Alveoli
B. Trachea
C. Bronchi
D. None of these

Q.61 What is the length of the windpipe?
A. 12 cm
B. 15cm
C. 18 cm
D. 20 cm

Q.62 Select the phase/s of breathing:
A. Inhalation
B. Exhalation
C. Both and A and B
D. Vocal waves

Q.63 The smaller tubes within the chest cavity having cartilaginous plates are known as
A. Pharynx
B. Bronchioles
C. Bronchi
D. Both B and C

Q.64 What is the human breathing rate during hard physical work?
A. 10 to 15 times per minute
B. 10 to 20 times per minute
C. 80 to 120 times per minute
D. 30-40 times per minute

Q.65 Each air-sac consists of several microscopic single layered structures called:
A. Bronchioles
B. Windpipe
C. Bronchi
D. Alveoli

Q.66 In human, the total inside capacity of lungs is about:
A. 3.5 liters
B. 2.5 liters
C. 4 liters
D. 6 liters

Q.67 Which of these does not contain cartilage?
A. Bronchioles
B. Larynx
C. Trachea
D. Bronchi

Q.68 A surfactant is a secretory product that is composed of:
A. Protein and disaccharide
B. Protein and lipid
C. Lipid and carbohydrate
D. Carbohydrate and vitamins

Q.69 What is the breathing rate in humans during exercise?
A. 15-20 times per minute
B. 30 times per minute
C. 20 times per minute
D. 10-20 times per minute

Q.70 The epiglottis, a flap of tissues covers the:
A. Pharynx
B. Larynx
C. Glottis
D. Nasal cavity

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Q.71 How many pair of ribs are present in chest wall?
A. 10
B. 11
C. 12
D. 13

Q.72 Which of these is not involved in respiration?
A. Lungs
B. Trachea
C. Glucagon
D. Bronchi

Q.73 A surfactant is essential for:
A. Efficient gas exchange
B. Both A and C
C. Maintaining structural integrity of alveoli
D. None of these

Q.74 Trachea is also termed as:
A. Voice box
B. Epiglottis
C. Bronchi
D. Windpipe

Q.75 Which pigment protein is also known as muscle haemoglobin?
A. Melanin
B. Myoglobin
C. Rhodopsin
D. Lutein

Q.76 Which of the following is the key function of pleural cavity?
A. Reduces friction between membranes
B. Slide easily on one another
C. Allows membrane to adhere on one another
D. All of these are correct

Q.77 During transport of carbon dioxide, blood does not become acidic due to:
A Blood buffer
B Neutralization of H_2CO_3 by Na_2CO_3
C. Absorption by leukocytes
D. Non-accumulation

Q.78 The oxygen and carbon dioxide crosses the plasma membrane by the process of?
A. Active diffusion
B. Facilitated diffusion
C. Passive diffusion
D. Random diffusion

Q.79 Maximum capacity of hemoglobin to absorb oxygen is:
A. 19.6ml/100 ml blood
B. 25 ml/100 ml blood
C. 30 ml/100 ml blood
D. 20 ml/100 ml blood

Q.80 Most carbon dioxide is transported in the form of:
A. Carboxyhaemoglobin
B. Plasma proteins
C. Bicarbonate ions
D. In dissolved form

Q.81 In nostrils, the substance which moistens and keep the incoming air warm is called:
A. Bronchi
B. Mucous
C. Pharynx
D. Glottis

Q.82 Each nasal cavity is subdivided into _____ passageways in man.
A. 1
B. 2
C. 3
D. 4

Q.83 A series of C shaped cartilage rings are found in the wall of:
A. Epiglottis
B. Trachea
C. Bronchi
D. None of these

Q.84 Air enters the nasal cavity through:
A. Lungs
B. Bronchi
C. Trachea
D. Nostrils

Q.85 The structures with a diameter less than 1mm are:
A. Bronchioles
B. Bronchi
C. Alveoli
D. Air sac

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Q.86 Which product is formed when carbon dioxide combines with amino group of haemoglobin?
A. Carboxyhemoglobin
B. Plasma proteins
C. Bicarbonate ions
D. Histamines

Q.87 The process through which organisms get oxygen for their cells from their surrounding environment is known as:
A. Respiratory exchange
B. Diffusion
C. Gaseous exchange
D. Osmosis

Q.88 Carbonic anhydrase is found in:
A. R.B.C
B. Parabronchi
C. Pleura
D. None of these

Q.89 The inflammation of bronchi or bronchioles is known as:
A. Emphysema
B. Pneumonia
C. Asthma
D. Bronchitis

Q.90 Breathing is considered as a:
A. Chemical process
B. Biochemical process
C. Mechanical process
D. Both A and B

Q.91 Glottis is lined with:
A. Plasma membrane
B. Mucous membrane
C. Meninges
D. Epithelial membrane

Q.92 The carbon dioxide transported in the form of carbonate ions is:
A. 30%
B. 50%
C. 70%
D. 95%

Q.93 Hemoglobin can carry:
A. 1 molecule of oxygen
B. 2 molecules of oxygen
C. 3 molecules of oxygen
D. 4 molecules of oxygen

Q.94 The infection of lungs is called:
A. Emphysema
B. Asthma
C. Pneumonia
D. Bronchitis

Q.95 The disease characterized by the breakdown of alveoli is called:
A. Asthma
B. Tuberculosis
C. Emphysema
D. A and B

Q.96 How many compounds of tar of tobacco smoke are included in causing cancer?
A. 2
B. 8
C. 5
D. More than 10

Q.97 The inside of the lungs is damaged in:
A. Emphysema
B. Lung cancer
C. Tuberculosis
D. Asthma

Q.98 Asthma releases a compound named as:
A. Histamine
B. Heparin
C. Epinephrine
D. Antibodies

Q.99 Loss of lung tissue is caused by:
A. Emphysema
B. Asthma
C. Pneumonia
D. Bronchitis

Q.100 Cancer expands systematically by:
A. Locally
B. Systemic
C. Metastasis
D. Invasion

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Q.101 The respiratory disorder in which cells division takes place without any control and causes tumors is known as:
A. Emphysema
B. Asthma
C. Lung cancer
D. Bronchitis

Q.102 What is the main cause of lung cancer?
A. Smoking
B. Cough
C. Pollutants
D. Mutagens

Q.103 The bronchitis is of types?
A. 2
B. 4
C. 3
D. 5

DIGESTIVE SYSTEM

Q.104 Pancreatic zymogens are only activated when they reached at?
A. Stomach
B. Pancreas
C. Small intestine
D. Large intestine

Q.105 The nodules of lymphoid tissue found in the wall of the intestinal tract are termed as:
A. Grave's region
B. Peyer's patches
C. Hashimoto's nodes
D. DiGeorge's nodes

Q.106 Zymogen cells secrete:
A. Pepsinogen
B. Mucus
C. HCL
D. Intrinsic factor

Q.107 It is not produced by duodenum:
A. Cholecystokinin
B. Secretin
C. Mucus
D. Biliverdin

Q.108 Salivary amylase acts on:
A. Starch
B. Cellulose
C. Protein
D. Lipid

Q.109 Trypsinogen is activated to trypsin by:
A. Kinases
B. HCL
C. Mucus
D. Enterokinase

Q.110 Cells that lower pH of stomach:
A. Mucous
B. Chief
C. Zymogen
D. Parietal

Q.111 Erypsin works on:
A. Polypeptide
B. Dipeptide
C. Peptone
D. All

Q.112 After stomach, digestion occurs in:
A. Small intestine
B. Cecum
C. Colon
D. Rectum

Q.113 Which is true about pepsin?
A. It is produced in inactivated form
B. It is produced form esophagus
C. It requires basic medium
D. It is an apoenzyme

Q.114 Secretion of secretin is forced by:
A. Food from stomach
B. Bile form liver
C. Pancreatic juice
D. All of these

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Q.115 Botulism is severe form of:
A. Anemia
B. Food poisoning
C. Beriberi
D. Constipation

Q.116 Loss of weight takes place due to:
A. Anorexia nervosa
B. Bulimia nervosa
C. Both A and B
D. Constipation

Q.117 Which enzyme is found in saliva?
A. Pepsin
B. Lipase
C. Ptyalin
D. Lactase

Q.118 Its length is 2.4m and comprises 2/5 of small intestine.
A. Ileum
B. Jejunum
C. Duodenum
D. None of these

Q.119 Pair of salivary glands located behind the jaws is called
A. Sublingual gland
B. Submaxillary glands
C. Parotid glands
D. Adrenal glands

Q.120 A condition with abnormal amount of fats is called:
A. Anorexia
B. Botulism
C. Piles
D. Obesity

Q.121 Largest gland in human body:
A. Liver
B. Adrenals
C. Thymus
D. Parotid

Q.122 Largest part of large intestine:
A. Rectum
B. Colon
C. Caecum
D. Appendix

Q.123 What is the length of duodenum in cm?
A. 15-20
B. 20-25
C. 21-25
D. 25-30

Q.124 Which of the following would most greatly increase the activity of an enzyme functioning in the small intestine?
A. Decrease the temperature
B. Increase the amount of substrate
C. Decrease the pH
D. Increase the amount of enzymes

Q.125 What is the pH of fresh HC1?
A. 1.5
B. 5-7
C. 2-3
D. 4-5

Q.126 In the intestine, the branches of lymph capillaries, within villi, are called:
A. Lacteals
B. Lymph
C. Lymphatic vessels
D. Lymph nodes

Q.127 Bacteria live in human body for enzymatic source and vitamin:
A. Enterococcus
B. Pseudomonas
C. Campylobacter
D. Spirochete

Q.128 The semi solid mass in stomach is known as:
A. Bolus
B. Chyme
C. Serum
D. Food

Q.129 Choose the function irrelevant to oral cavity:
A. Grinding
B. Digestion
C. Lubrication
D. Absorption

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Q.130 Lipid emulsification is done by:
A. Pancreatic juice
B. Bile
C. Gastric juice
D. Intestinal juice

Q.131 Incomplete or imperfect digestion is known as which of the following?
A. Obesity
B. Anorexia nervous
C. Bulimia nervous
D. Dyspepsia

IMMUNE & SYSTEM

Q.132 The deficiency of which of the following cause the immunodeficiency?
A. Hypoxanthine-guanine transferase
B. Xanthine oxidase
C. PRPP synthetase
D. Adenosine deaminase

Q.133 What is true about T-Cells?
A. A type of lymphocytes
B. Present in blood and work as defence
C. They kill the foreign invader
D. All

Q.134 Pathogens inside body are killed by:
A. Antibodies
B. Immune system cells
C. Interferon
D. All of these

LYMPHATIC SYSTEM

Q.135 A fluid in transit between interstitial fluid and the blood:
A. Synovial fluid
B. Pleural fluid
C. Amniotic fluid
D. Lymph

Q.136 The number of efferent lymph vessels in a lymphatic system is:
A. 1
B. 2
C. 3
D. Numerous

Q.137 Tonsils are related to:
A. Lymphatic system
B. Blood circulatory system
C. Nervous system
D. Defense system

Q.138 Slow rate of peristalsis causes:
A. Diarrhoea
B. Constipation
C. Vomiting
D. All of these

Q.139 Amount of lymph produced per day is:
A. 2 to 3 liter
B. 7 to 8 liter
C. 8 to 12 liter
D. None

Q.140 Lymph nodes may be located in the human body in the tissues of:
A. Stomach
B. Brain
C. Thyroid gland
D. Groin and neck

Q.141 The flow of lymph is always towards:
A. Pancreatic duct
B. Thoracic duct
C. Bile duct
D. Parotid dust

Q.142 Lymph capillaries join together form larger lymph vessels, that gives rise to:
A. Thoracic duct
B. Lymph duct
C. Thoracic lymph duct
D. Sperm duct

Q.143 Lymphatic system consists of all the following except:
A. Lymph nodes
B. Blood
C. Lymphatic vessels
D. Lymph

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Q.144 The function of lymph node is to filter_____.
A. Blood
B. Lymph
C. Semen
D. Amniotic fluid

Q.145 Thymus is found in human body _____.
A. In the medulla oblongata
B. In the mediastinum if the upper thorax
C. Both A & B
D. None

Q.146 Which of these is correct about thoracic duct?
A. It arises in the vessels of the brain
B. It drains the entire body above the diaphragm
C. It empties its contents into the subclavian vein
D. It carries blood into the lymphatic system

Q.147 Lymph vessels transfer the lymph into blood through:
A. Subclavian artery
B. Subclavian vein
C. Iliac artery
D. Iliac vein

Q.148 Lymphoid masses present in the wall of:
A. Digestive track
B. Sub Mucosa
C. Mucosa
D. All of these

OUT OF THE SYLLABUS

Q.149 The space between the overtopped dichotomous branches was occupied by a sheet of which cells during evolution of megaphylls?
A. Sclerenchyma
B. Parenchyma
C. Collenchyma
D. Chlorenchyma

Q.150 There are how many stomata per square cm of leaf surface in Tobacco plants?
A. 10000
B. 12000
C. 15000
D. 20000

Q.151 Which element has function in opening and closing of stomata?
A. K
B. Mg
C. Cu
D. Fe

Q.152 Chlorosis, which is represented by yellowish hue on the leaves results from which of the following?
A. Accumulation of toxic waste products in leaves
B. Deficiency of chlorophyll
C. Short supplies of mineral nutrients in the soil
D. All of these

Q.153 Cell turgidity is caused by:
A. Endosmosis
B. Exosmosis
C. Plasmolysis
D. Active transport

Q.154 It is a detritus feeder:
A. Leech
B. Earthworm
C. Hook worm
D. Pin worm

Q.155 Autoimmune diseases act at the principal of:
A. Self against self
B. Self against antigens
C. Antigens self-destroyed
D. Antigens against self

Q.156 Thick, waxy & leathery cuticle around leaves is present in which of the following?
A. Hydrophytes
B. Mesophytes
C. Halophytes
D. Xerophytes

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ANSWER KEY

1	D	21	C	41	B	61	A	81	B	101	C	121	A	141	B
2	A	22	B	42	A	62	C	82	C	102	D	122	B	142	B
3	C	23	A	43	D	63	C	83	B	103	A	123	D	143	B
4	A	24	C	44	D	64	D	84	D	104	C	124	D	144	B
5	A	25	B	45	D	65	D	85	A	105	B	125	A	145	B
6	C	26	A	46	D	66	D	86	A	106	A	126	A	146	C
7	C	27	C	47	B	67	A	87	C	107	D	127	A	147	B
8	A	28	D	48	B	68	B	88	A	108	A	128	B	148	A
9	C	29	B	49	A	69	B	89	D	109	D	129	D	149	B
10	C	30	C	50	B	70	B	90	C	110	D	130	B	150	B
11	B	31	A	51	A	71	C	91	B	111	C	131	D	151	A
12	C	32	D	52	A	72	C	92	C	112	A	132	D	152	B
13	B	33	A	53	D	73	B	93	D	113	A	133	D	153	A
14	C	34	A	54	A	74	D	94	C	114	A	134	B	154	B
15	B	35	A	55	D	75	B	95	C	115	B	135	D	155	A
16	C	36	D	56	C	76	D	96	D	116	C	136	A	156	D
17	A	37	D	57	C	77	A	97	A	117	C	137	A		
18	C	38	B	58	A	78	C	98	A	118	B	138	B		
19	A	39	D	59	B	79	D	99	A	119	B	139	A		
20	A	40	B	60	D	80	C	100	C	120	D	140	D		

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10 TOPIC PROKARYOTES PRACTICE EXERCISE

CELLULAR STRUCTURE OF BACTERIA

Q.1 Cyanobacteria have which of the following type of cell wall?
A. Gram positive
B. Gram negative
C. Cellulose
D. Acid fast

Q.2 In a bacterial cell, plasma membrane with all things present within it is called:
A. Cytoplasmic matrix
B. Cytoplasm
C. Protoplast
D. Cell Structure

Q.3 Prokaron means before nucleus is word of_____ language.
A. Dutch
B. Greek
C. Roman
D. Spanish

Q.4 Microbiologist place bacteria in following major categories:
A. Archaeobacteria and vibrio bacteria
B. Eubacteria and Streptococcus
C. Eubacteria and archaeobacteria
D. Cyanobacteria and archaeobacteria

Q.5 The Prokaryotic Life is characterized by
A. Absence of locomotion
B. Absence of nuclear envelope
C. Absence of Protein
D. Absence of nuclear material

Q.6 All of the following are characteristics of prokaryotic cells except?
A. Unicellular
B. Lack of membrane-bound organelle
C. Lack of a nucleus
D. They are usually found in protists and fungi

Q.7 Which of the following structures helps cyanobacteria to move?
A. Flagella
B. Capsule
C. Gas vesicles
D. None of these

Q.8 What is the strengthening material of the prokaryotic cell wall?
A. Cellulose
B. Chitin
C. Silica waxes and lignin
D. Peptidoglycan or murein

Q.9 What is not a part of protoplasm?
A. Capsule of bacteria
B. Nucleus
C. Cell membrane
D. Mitochondria

Q.10 The gram positive bacteria appear which colour under gram staining?
A. Purple
B. Red
C. Pink
D. Blue

Q.11 In Prokaryotes, _____are involved in respiration.
A. Mesosomes and cell membrane
B. Cell membrane and ribosome
C. Mesosomes and ribosomes
D. All of Above

Q.12 Methicillin-resistant Staphylococcus aureus is an antibiotic-resistant "superbug" that can cause deadly infections in humans. What would these Gram-positive bacteria look like under a microscope?
A. Purple spheres
B. Clear rods
C. Pink rods
D. Purple spirals

Q.13 The filamentous appendages called pilli are present -
A. Gram - Positive bacteria
B. Grar
C. Chemosynthetic bacteria
D. Noı

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Q.14 The mode of reproduction for cyanobacteria is which of the following?
A. Mitosis
B. Binary fission
C. Meiosis
D. Conjugation

Q.15 Which of the following is found in bacterial cells, but not in mature red blood?
A. Nucleus
B. DNA
C. Cell membrane
D. Mitochondria

Q.16 A bacterium with tuft of flagella at both poles is called?
A. Lophotrichous
B. Peritrichous
C. Monotrichous
D. Amphitrichous

Q.17 The most common waste material produced by bacteria is?
A. Lactic acid
B. Urea
C. Ammonia
D. Uric acid

Q.18 Which of the following contains genes for drug and disease resistance in bacteria?
A. Plasmid
B. Nucleotide
C. Mesosomes
D. All of these

Q.19 Archaeobacteria can survive at which of the following temperature? (Celsius)
A. 300
B. 120
C. 150
D. 200

Q.20 Pilli are hollow appendages in bacteria that are used for:
A. Motility
B. Conjugation
C. Chemical detection
D. None of above

Q.21 Which of following is not considered as basic shape of a bacterium
A. Cocci
B. Filamentous
C. Spiral
D. Bacilli

Q.22 Cell wall is only absent in which of the following group of bacteria?
A. Staphylococci
B. *Pseudomonas*
C. *Diplococcus pneumonia*
D. *Mycoplasmas*

Q.23 In what category of bacteria does Neisseria most likely fall?
A. Cocci
B. Bacilli
C. Spirochete
D. None of these

Q.24 Which of the following structure is not present in all bacteria?
A. Cell membrane
B. Chromatin
C. Ribosome
D. Capsule

Q.25 Which of the following is not a method of genetic recombination in bacterium?
A. Conjugation
B. Transformation
C. Transduction
D. Binary Fission

Q.26 Which of the following bacteria do not commonly have flagella?
A. Cocci
B. Bacilli
C. Streptobacillus
D. Vibrio

Q.27 What allows bacteria to stain positively with gram stain?
A. The bacteria is anaerobic
B. The bacterial sample was pretreated with 3% ethanol
C. The bacteria's periplasmic space
D. The bacteria's thick peptidoglycan cell walls

Q.28 The process of recombination in prokaryotes takes place in which of the following ways?
A. Transformation
B. Conjugation
C. Transduction
D. All of these

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Q.29 The flagella originate from which part of the cell?
A. Basal body
B. Cell membrane
C. Cell wall
D. Capsule

Q.30 Those bacteria which are fully dependent upon their host for nutrition are called:
A. Heterotrophic bacteria
B. Saprotrophic bacteria
C. Chemosynthetic bacteria
D. Parasitic bacteria

Q.31 Flagella are basically composed of?
A. Protein
B. Enzyme
C. Chemical
D. None of above

Q.32 Which of the following would not be found in a prokaryotic cell?
A. Mitochondria
B. RNA
C. Ribosomes
D. Plasma membrane

Q.33 Which of the following characteristics make plasmid DNA useful for researchers
A. Readily incorporate cloned DNA
B. Capable of autonomous replication
C. Capable of being isolated from genomic DNA
D. All of these

Q.34 Characteristic of prokaryotic cells?
A. Absence of membrane bound cell organelles
B. Absence of nucleus
C. Presence of 70S ribosomes
D. All of these

Q.35 Which of the following would not be observed in a bacterial cell?
A. DNA
B. Golgi apparatus
C. Cell membrane
D. Ribosomes

Q.36 The function of cell wall in prokaryotes is:
A. To give cells rigidity
B. To give specific shape
C. To protect from osmotic lysis
D. All of the above

Q.37 True bacteria are termed as:
A. Eubacteria
B. Archaeobacteria
C. Cyanobacteria
D. None of above

Q.38 The presence of peptidoglycan in Gram positive bacteria is:
A. 40% of dry weight
B. 50% of dry weight
C. 10% of dry weight
D. 80% of dry weight

Q.39 Which of the following is true of both bacterial conjugation and meiosis?
A. Both processes produce four haploid cells
B. Both processes are a form of asexual reproduction
C. Both processes involve genetic recombination
D. None of these

Q.40 A type of bacterial cell that completely surrounded by flagella is called:
A. Diplococcus
B. Tetrad
C. Peritrichous
D. Monotrichous

Q.41 Which of the following is heat resistant organelle?
A. Spores
B. Cysts
C. Granules
D. All of Above

Q.42 Which of the following is false about conjugation?
A. It forms a bridge between two bacterial cells
B. It involves transport of genetic material via vectors
C. It is a form of sexual reproduction
D. Both A and B

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Q.43 For respiratory metabolism, bacterial cell membrane contains:
A. Proteins
B. Lipids
C. Enzymes
D. Chemicals

Q.44 What is the name of the region where double-stranded single circular DNA is found in the prokaryotic cell?
A. Proton Nucleus
B. Nucleus
C. Nucleoplasm
D. Nucleoid

Q.45 What is true for pili and flagella like structures of bacteria:
A. Both are same in size
B. Both are involved in locomotion
C. Both are composed of proteins
D. All of Above

Q.46 Which of the following structure provides greater pathogenicity to the bacteria?
A. Slime
B. Cell wall
C. Cell membrane
D. Capsule

Q.47 The presence of which of these cell structures would confirm that the cell is prokaryotic?
A. Cytoplasm
B. Ribosomes
C. Flagella
D. Peptidoglycan cell wall

Q.48 In prokaryotic cells, ribosomes are of?
A. 50S + 40S
B. 80S
C. 60S + 40S
D. 70S

Q.49 Cell wall of a bacterial cell is more permeable in:
A. Gram positive bacteria
B. Gram negative bacteria
C. Both A & B
D. Mycoplasmas

Q.50 Which of the following is a form of asexual reproduction in prokaryotic cells?
A. Binary fission and mitosis
B. Binary fission and meiosis
C. Binary fission and transformation
D. Binary fission

Q.51 The cell wall of Archaeobacteria does not contain which of the following?
A. Glycoproteins
B. Polysaccharides
C. Proteins
D. Peptidoglycan

Q.52 Which of the following is most responsible for bacterial cell motility?
A. Cilia
B. Flagella
C. Pili
D. Pseudopodia

Q.53 Chromatin body in prokaryotes can also termed as:
A. Nuclear body
B. Nuclear region
C. Nucleoid
D. All of Above

Q.54 Cyanobacteria help in nitrogen fixation since they have:
A. Heterocyst
B. Hormogonia
C. Akinetes
D. Mesosomes

Q.55 Protein named as pilin is present in:
A. Flagella
B. Pilli
C. Capsule
D. Slime

Q.56 Periplasmic space is absent in:
A. Gram positive bacteria
B. Gram negative bacteria
C. Both and B
D. None

Q.57 Which part of bacteria is most delicate and damage can kill bacterial cell immediately?
A. Cell wall
B. Cell membrane
C. Slime
D. Capsule

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PMC Topic-10

Q.58 It occupies position near center of cell:
A. Chromosome
B. Plasmid
C. Nucleoid
D. Mitochondria

Q.59 Which is present in every bacterium?
A. Cell wall
B. Slime
C. Cell membrane
D. Capsule

Q.60 Cyanobacteria are related to eukaryotes in having:
A. PS1
B. PSII
C. Both A and B
D. None

Q.61 Which organelle is of prokaryotic origin?
A. Mitochondria
B. Chloroplast
C. Both A and B
D. None of the above

Q.62 Spores are resistant to:
A. Antibodies
B. Environmental stress
C. Disinfectants
D. All of these

Q.63 Cyanobacteria move by:
A. Gas vesicles
B. Gliding motility
C. Flagella
D. Both A and B

Q.64 Purple non-sulphur is an example of:
A. Photosynthetic bacteria
B. Heterotrophic bacteria
C. Saprotrophic bacteria
D. Chemosynthetic bacteria

Q.65 Which of the following type of bacterial replication is most similar to mitosis?
A. Transduction
B. Binary fission
C. Conjugation
D. Transformation

Q.66 Example of bacterial requiring low concentration of oxygen is:
A. Spirochete
B. *E. coli*
C. *Pseudomonas*
D. *Campylobacter*

Q.67 Bacteria that live in humus are _____.
A. Saprophytic
B. Anaerobic
C. Aerobic
D. Facultative

Q.68 Cyanobacteria are _____ in nature.
A. Autotroph
B. Heterotroph
C. Decompose
D. None

Q.69 All bacterial species have this organelle in common:
A. Ribosome
B. Flagella
C. Pilli
D. Cell wall

Q.70 Aerobic bacteria release:
A. Sulphur
B. Oxygen
C. CO_2
D. Hydrogen

Q.71 Bacteria without flagella are called:
A. Atrichous
B. Amphitrichous
C. Lophotrichous
D. Peritrichous

Q.72 E. coli is a:
A. Facultative
B. Anaerobic
C. Gram negative
D. All of these

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Q.73 **Which true prokaryotes is a photosynthetic bacterium?**
A. Cyanobacteria
B. *Nostoc*
C. *Chlorella*
D. *E. coli*

Q.74 **The structure of prokaryote which is involved in attachment:**
A. Pili
B. Flagella
C. Cell wall
D. Outer membrane

Q.75 **Cyanobacteria undergo photosynthesis with help of:**
A. Phycobilisome
B. Mesosomes
C. Spores
D. Cytoplasmic granule

SHAPE AND SIZE OF BACTERIA

Q.76 **Streptobacillus is basically a:**
A. Single cell
B. Chain of bacilli
C. Pairs of bacilli
D All of Above.

Q.77 **The several distinct arrangements of cocci is based on their**
A. Long chain of cells
B. Planes of division
C. Grape like clustered shape
D. All of Above

Q.78 **In cocci, three plane division results in the formation of sarcina which is a:**
A. Cube of 8 cocci
B. Square of 4 cocci
C. Irregular structure
D. Triangular 6 cocci

Q.79 **Division of cocci in three planes results in formation of:**
A. Sarcina
B. Tetrad
C. Grape like clusters
D. All of above

Q.80 **The size of Spirochete is approximately?**
A. 0.75-1.25 um
B.100-200 nm
C. 0.1 -600 um
D. 500 um

Q.81 **Spiral shaped bacteria is:**
A. *E. coli*
B. *Vibrio*
C. *Mycoplasma*
D. *Bacillus*

Q.82 **A huge microorganism, Acanthurus nigrofuscus is a_____ discovered in intestine of brown surgeonfish.**
A. Bacterium
B. Virus
C. Parasite
D. Protozoa

Q.83 **Group of 8 cocci bacteria is called?**
A. Diplococci
B. Streptococcus
C. Tetrad
D. Sarcina

Q.84 **Which of the following has a chain-like arrangement?**
A. Streptobacillus
B. Streptococci
C. Both A and B
D. None of these

Q.85 **Which of the following bacteria possesses a spherical shape?**
A. Bacillus anthracis
B. Escherichia coli
C. Spirillum minus
D. Staphylococcus aureus

Q.86 **Coccobacillus has a shape similar to which of the following?**
A. Egg
B. Rod
C. Ball
D. None of these

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Q.87 Which is a spiral shape bacteria?
A. *Spirochete* B. E. coli
C. *Pseudomonas* D. *Streptococcus*

Q.88 Which of the following bacteria is equal to the size of hyphen?
A. *Epulopiscium fishelsoni* B. *Pseudomonas aeruginosa*
C. *Escherichia coli* D. *Streptococcus pneumoniae*

IMPORTANCE AND CONTROL OF BACTERIA

Q.89 Chemical substances used on living tissues that inhibit the growth of microorganism are called?
A. Disinfectant B. Sanitizer
C. Antibiotic D. Antiseptics

Q.90 Approximately how many species of bacteria are known to cause diseases in humans?
A. 100 B. 150
C. 200 D. 250

Q.91 Discoloration of teeth is due to misuse of:
A. Tetracycline B. Ampicillin
C. Kanamycin D. Erythromycin

Q.92 For sterilization, _____ are used.
A. UV rays B. IR rays
C. Gamma rays D. X-rays

Q.93 Deafness is caused by excess use of:
A. Tetracycline B. Streptomycin
C. Levofloxacin D. Erythromycin

Q.94 Bacteria play important role in:
A. Nitrogen cycle B. Carbon cycle
C. Urea cycle D. Water cycle

Q.95 For sterilization, which of the following is used:
A. Dry heat B. Moist heat
C. Gamma rays D. All of these

Q.96 Pesticide and insecticides are made up of:
A. Physical agents B. Biological agents
C. Chemical agents D. All of these

Q.97 Removal of a parasite from the body of the host is called:
A. Sterilization B. Disinfection
C. Disinfestation D. None of these

Q.98 What is the main role of bacteria?
A. CO_2 cycle B. Nitrogen cycle
C. Phosphorus cycle D. All of above

OUT OF SYLLABUS

Q.99 Who coined the term Animalcules for microorganisms like Bacteria and protozoa?
A. Robert Koch B. Louis Pasteur
C. Alexander Fleming D. Leeuwenhoek

Q.100 Rapid growth at exponential rate occurs in which phase of bacterial growth?
A. Lag B. Log
C. Stationary D. Decline

Q.101 Which of the following refers to the region of RNA responsible for binding ribosomes during prokaryotic translation?
A. TATA box B. Promoter
C. Terminator D. Shine-Dalgarno sequence

Q.102 Compound Microscope was first used by:
A. A.V. Leeuwenhoek
B. Pasture
C. Janssen and Hans
D. None of these

Q.103 Which of the following will not survive in the presence of oxygen?
A. Constitutive anaerobe
B. Facultative anaerobe
C. Constitutive aerobe.
D. Obligate anaerobe

Q.104 Which of the following statement is incorrect regarding germ theory of diseases postulated by Robert Koch?
A. A specific organism can always be found in association with a given disease
B. The organism can be isolated and grown in pure culture in the laboratories
C. It is possible to recover the organism in pure culture from the experimentally infected animals.
D. The pure culture cannot produce the disease when inoculated into susceptible animal

Q.105 Example of bacteria requiring low concentration of oxygen is:
A. *Spirochete*
B. *Escherichia*
C. *Pseudomonas*
D. *Campylobacter*

Q.106 Robert Koch discovered bacteria that cause:
A. Tuberculosis and Typhoid
B. Tuberculosis and Cholera
C. Tuberculosis and Measles
D. All of Above

Q.107 Microscope's ability to distinguish between separate objects that are close together is called?
A. Magnification
B. Resolving power
C. Contrast
D. Scanning power

Q.108 The nitrifying bacteria are an example of which of the following?
A. Heterotrophic bacteria
B. Saprotrophic bacteria
C. Chemosynthetic bacteria
D. Parasitic bacteria

ANSWER KEY

1	B	21	B	41	A	61	C	81	B	101	D
2	C	22	D	42	B	62	D	82	A	102	A
3	B	23	A	43	C	63	D	83	D	103	D
4	C	24	D	44	D	64	A	84	B	104	D
5	B	25	D	45	C	65	B	85	D	105	D
6	D	26	A	46	A	66	D	86	A	106	B
7	D	27	D	47	D	67	B	87	A	107	B
8	D	28	D	48	D	68	A	88	A	108	C
9	A	29	A	49	A	69	A	89	D		
10	A	30	D	50	D	70	C	90	C		
11	A	31	A	51	D	71	A	91	A		
12	A	32	A	52	B	72	D	92	A		
13	B	33	D	53	D	73	A	93	B		
14	B	34	D	54	A	74	A	94	A		
15	B	35	B	55	B	75	A	95	D		
16	D	36	D	56	D	76	B	96	C		
17	A	37	A	57	B	77	B	97	C		
18	A	38	B	58	C	78	A	98	D		
19	B	39	C	59	C	79	A	99	D		
20	B	40	C	60	C	80	D	100	B		

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11 TOPIC PRACTICE

MALE REPRODUCTIVE SYSTEM

Q.1 In the male reproductive tract, sperm cells follow a specific path. Where sperm cells enter after traveling through the epididymis?
A. Urethra
B. Seminiferous tubules
C. Ejaculatory duct
D. Vas deferens

Q.2 The epididymis, vas deferens, and urethra are a series of ducts found in which body system?
A. Endocrine
B. Lymphatic
C. Digestive
D. Male reproductive

Q.3 Sperms are produced in:
A. Urethra
B. Pancreas
C. Sperm dust
D. Testis

Q.4 Spermatids differentiate into:
A. Spermatozoa
B. Mature sperms
C. Primary oocyte
D. Secondary spermatocyte

Q.5 The primary spermatocytes undergo meiotic division to form:
A. Spermatozoa
B. Secondary spermatocyte
C. Primary oocyte
D. Mature sperms

Q.6 Which one of the following is most likely to occur in a boy during puberty?
A. He produces eggs
B. His shoulders broaden
C. Color of his eyes changes
D. None of the above

Q.7 Protection and nourishment of sperms are provided by:
A. Fluid secreted by sertoli cells
B. Interstitial fluid
C. Fluid in scrotum
D. All of the above

Q.8 In mammalian male, the reproductive and excretory system share the same:
A. Vas deferens
B. Urinary bladder
C. Ureter
D. Urethra

Q.9 Human sperm moves by:
A. Flagella
B. Cilia
C. Pilli
D. All of these

Q.10 The sperm duct from each side passes into which of the following?
A. Ureter
B. Urethra
C. Testes
D. Abdominal cavity

Q.11 Sperms are developed at what temperature?
A. Lower than body temperature
B. Higher than body temperature
C. Body temperature
D. All of these

Q.12 What is the name of the tube that carries sperm and urine out of the human bo
A. Penis
B. Seminal vesicles
C. Urethra
D. Ureter

Q.13 The highly complex duct system in male is called:
A. Scrotum
B. Seminiferous tubules
C. Prepuce
D. Epididymis

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Q.14 **The cells that secrete testosterone**
A. Nerve cells
B. Fat cells
C. Muscle cells
D. Interstitial cells

Q.15 **Select the function/s of male reproductive system:**
A. To produce enzymes
B. To transfer sperms to the female
C. To produce sperms
D. Both B and C are correct

Q.16 **The spermatic cord and spermatic duct are?**
A. Same
B. Different
C. Same in function
D. Same in location

Q.17 **Fluid secreted by sertoli cells provides sperms with which of the following?**
A. Liquid medium
B. Nourishment
C. Protection
D. All

Q.18 **The sperm duct open into which of the following?**
A. Ureter
B. Urethra
C. Testes
D. All of these

Q.19 **All of the following statements are correct except:**
A. The testicles produce millions of sperm.
B. Hormones are produced by the testicles.
C. Semen is produced in the seminal vesicles
D. All males are born with one testicle

Q.20 **The scrotum is responsible for which of the following in the male reproductive system?**
A. Synthesis of sperm
B. Lubrication
C. Nourishment of sperm
D. Temperature regulation

Q.21 **Which of the following is not a true characteristic of spermatogonia?**
A. They develop into primary spermatocytes through mitosis
B. They are undifferentiated
C. They are germ line cells
D. They are haploid

Q.22 **The number of spermatids produced from primary spermatocytes is?**
A. 1
B. 3
C. 3
D. 4

Q.23 **Where does the human body store spermatozoa?**
A. Ejaculatory duct
B. Seminal vesicle
C. Seminiferous tubules
D. Epididymis

Q.24 **The male gonads are known as?**
A. Testes
B. Testosterone
C. Ovaries
D. Ovum

Q.25 **The hormone that is released from the testes is?**
A. Progesterone
B. Estrogen
C. Testosterone
D. All of these

Q.26 **Sperms are nourished and activated through?**
A. Vas deferens
B. Prostate gland
C. Semen
D. All of these

Q.27 **External genitalia of human male consist of a pair of testes which lie outside the body in the sac like?**
A. Bag
B. Scrotum
C. Pouch
D. All of these

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PMC Topic-11

Q.28 Which of the following is found beneath the prostate gland?
A. Vas deferens
B. Seminal vesicle
C. Urethra
D. Cowper's gland

Q.29 Fluid secreted by three sets of glands combines with sperm to form:
A. Interstitial fluid
B. Semen
C. Amniotic fluid
D. Both A and B

Q.30 External male genitalia are:
A. A pair of testes
B. Seminiferous tubules
C. Male copulatory organ
D. Both A and C

Q.31 In male reproductive system which gland neutralizes the pH of urethra?
A. Ejaculatory gland
B. Prostate gland
C. Seminal vesicle gland
D. Bulbourethral gland

Q.32 How many million sperms are produced in human per day?
A. 10
B. 20
C. 30
D. 400

Q.33 Sperm secrete which enzyme?
A. Acrosome
B. Hyaluronidase
C. Lipase
D. Both A and B

Q.34 Which of these transports sperm from the testis to the penis?
A. Sperm duct
B. Sacrotum
C. Urethera
D. Gamete

Q.35 What is a key difference between spermatogenesis and oogenesis?
A. Spermatogenesis results in only 1 sperm; oogenesis results in 4 eggs.
B. Spermatogenesis results in 2 sperm; oogenesis results in only 1 egg.
C. Spermatogenesis results in 8 sperm; oogenesis results in only 4 eggs.
D. Spermatogenesis results in 4 sperm; oogenesis results in only 1 egg

FEMALE REPRODUCTIVE SYSTEM (INCLUDING MENSTRUAL CYCLE)

Q.36 Human embryo is called fetus from the beginning of?
A. 2nd month
B. 3rd month
C. 4th month
D. 5th month

Q.37 Fusion of male and female gametes is called:
A. Fertilization
B. Implantation
C. Development
D. Growth

Q.38 Ovum receive sperm at:
A. Animal pole
B. Vegetal pole
C. Both A and B
D. None of these

Q.39 Another name for the sex cell is:
A. Hormone
B. Gamete
C. Zygote
D. Testicle

Q.40 Follicular phase ranges from _____ days.
A. 1-5
B. 15-28
C. 11-15
D. 6-14

Q.41 During 6-28 days of menstrual cycle, _____ is thickened.
A. Epiderm
B. Myometrium
C. Endometrium
D. Epimetrium

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Q.42 **Secondary oocyte maturation takes place in:**
A. Ovary
B. Uterus
C. Cervix
D. Fallopian tube

Q.43 **Proliferative phase lasts for _____days.**
A. 1-5
B. 5-13
C. 15-28
D. 16-18

Q.44 **Placenta is established between:**
A. Uterine and foetal tissues
B. Uterine and cervix
C. Cervix and vagina
D. Ovary and oviduct

Q.45 **In 16-28 days _____ takes place.**
A. Shedding to uterus
B. Thickening of uterus wall
C. Development of follicle
D. Implantation

Q.46 **After fertilization the zygote increases in size and travels down the fallopian tube to become embedded in the walls of the womb. This process is called:**
A. Ovulation
B. Conception
C. Implantation
D. Menstruation

Q.47 **Which of these cycles operate in human females?**
A. Oestrous cycle
B. Menstrual cycle
C. Both A and B
D. None of these

Q.48 **Which does not occur in females at the puberty?**
A. Voice deepens
B. Pubic hair growth
C. Hips broadens
D. Start of menstrual cycle

Q.49 **Between the seminiferous tubules are interstitial cells which secrete which of the following hormone?**
A. Progesterone
B. Oxytocin
C. Testosterone
D. Estrogen

Q.50 **Development of primary follicles is induced by:**
A. LH
B. Estrogen
C. FSH
D. Progesterone

Q.51 **Labor pains are induced by:**
A. Placenta disintegration
B. Distension of cervix
C. Secretion of oxytocin
D. Estrogen production

Q.52 **Which of the following would not be expected during pregnancy?**
A. Maintenance of the corpus luteum
B. Formation of the placenta
C. Blastocyst implantation
D. Formation of the corpus albicans

Q.53 **In humans, fertilization involves the addition of chromosomes from the sperm and the egg. The resulting cell is called a?**
A. Zygote
B. Egg
C. Embryo
D. Fetus

Q.54 **Which characteristic is not in human girls if she is young?**
A. Menopause
B. Menarche
C. Huge hips
D. Hairs

Q.55 **Test tube helps in:**
A. In vitro fertilization
B. In vivo fertilization
C. Both A and B
D. Ex vitro fertilization

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Q.56 Sex is determined after:
A. 4-8 moths
B. 2-3 months
C. 6-8 moths
D. 8 months

Q.57 Lactation in stimulated by:
A. LTH
B. Lactogen
C. Placenta
D. ALL A, B, C

Q.58 In humans placenta is established by:
A. Hypothalamus
B. Progesterone
C. Thalamus
D. Estrogen

Q.59 The time in a woman's life when menstruation usually no longer occurs:
A. Late 50s
B. Mid 40s
C. Teens
D. Early 20s

Q.60 The organs that produce reproductive cells are known as?
A. Gametes
B. Gonads
C. Glands
D. Follicles

Q.61 When a female ovulates, in what phase of division is the oocyte?
A. Anaphase I
B. Prophase I
C. Metaphase I
D. Metaphase II

Q.62 The number of chromosomes in a zygote are?
A. n
B. 2n
C. 3n
D. 4n

Q.63 The uterine tube opens into:
A. Ovary
B. Ureters
C. Oviduct
D. None of these

Q.64 Fertilization of ovum occurs during which of the following?
A. In uterus
B. In ovary
C. In distal part of oviduct
D. In proximal part of oviduct

Q.65 Which is the largest cell in the human body?
A. Macrophage
B. Ovum
C. Granule cell
D. None of These

Q.66 Oogenesis starts:
A. From puberty
B. At menarche
C. At adult stage
D. Before birth

Q.67 It does not occur in female during menstruation:
A. Breast enlargement
B. Broadening of shoulder
C. Fatigue
D. Bloating

Q.68 Disturbance in _____ may lead to miscarriage or premature birth.
A. LH
B. Progesterone
C. FSH
D. Estrogen

Q.69 The oviduct is also called as:
A. Fallopian tube
B. Uterine tube
C. Both A and B
D. Uterus

Q.70 Placenta is important as its function is to:
A. Exchange oxygen
B. Exchange carbon dioxide
C. Exchange nutrients
D. All A, B and C are correct

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Q.71 **In human female, the fertilized egg gets implanted in uterus:**
A. After about 7 days of fertilization
B. After about 30 days of fertilization
C. After about two months of fertilization
D. After about 3 weeks of fertilization

Q.72 **The union of meiotically produced specialized sex cells from each parents produce?**
A. Fertilized egg
B. Porifera
C. Zygote
D. None of these

Q.73 **2nd meiotic division in oocyte is completed during?**
A. When ovum is discharged from the ovary
B. Just before fertilization
C. Before the onset of menstruation
D. When oocyte is fertilized by sperm

Q.74 **The end or complete stop of the menstrual cycle is called:**
A. Ovulation
B. Menopause
C. Fertilization
D. Menstruation

Q.75 **Endometrium stimulation and vascularization is done by**
A. Estrogen
B. Progesterone
C. FSH
D. LH

Q.76 **The internal living of the uterus wall is called:**
A. Endometrium
B. Perimetrium
C. Corpus luteum
D. None of these

Q.77 **Which factors affect the female reproductive cycle?**
A. Malnourishment
B. Emotional stress
C. Both A and B
D. None of these

Q.78 **An egg is fertilized in laboratory and implanted in uterus for development. This is called:**
A. Test tube baby
B. Cloning
C. In vitro fertilization
D. Both A and B

Q.79 **Which one of the following is not part of the female reproductive system?**
A. Ovary
B. Vagina
C. Urethra
D. Uterus

Q.80 **Germ cells in the ovary produce many?**
A. Spermatogonia
B. Oogonia
C. Zygospores
D. Eggs

Q.81 **The proximal part of the oviduct is significant because:**
A. Fertilization occurs here
B. Implantation occurs here
C. Placenta is established here
D. None of these

Q.82 **Secondary oocyte is ovulated from:**
A. Corpus luteum
B. Graafian follicle
C. Primary follicle
D. Germinal epithelium

Q.83 **Which hormone is produced mainly by corpus luteum in the ovary following ovulation?**
A. Progesterone
B. Chorionic gonadotrophic hormone
C. FSH
D. LH

Q.84 **Nutrition to egg in ovary is provided by which of the following?**
A. Germ cells
B. Milk cells
C. Follicle cells
D. All of these

Q.85 **Uterus opens into the vagina through:**
A. Uterus
B. Cervix
C. Oviduct (fallopian tube)
D. Ovary

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PMC Topic-11

Q.86 In a typical menstrual cycle of 28 days, what is the most likely fertile period?
A. Days 5 to 10
B. Days 1 to 5
C. Days 14 to 15
D. Days 11 to 14

Q.87 The discharge of ovum from ovary is called:
A. Lactation
B. Ovulation
C. Placenta formation
D. Menstruation

Q.88 Urethra and vagina have openings to the exterior:
A. Common
B. Independent
C. Both A and B
D. None of these

Q.89 What event occurs in the menstrual cycle when the level of progesterone declines?
A. Ovulation
B. Menstruation
C. Menopause
D. Fertilization

Q.90 Which cells produce oogonia in ovary?
A. Stromal cells
B. Epithelial cells
C. Germ cells
D. theca cells

Q.91 The period during which a girl sexually matures is called:
A. Menstrual cycle
B. Puberty
C. Childhood
D. Teens

Q.92 Average loss of blood during birth is about how many cm3?
A. 250
B. 300
C. 350
D. 400

Q.93 Gametes in animals are produced by which of the following?
A. Mitosis
B. Meiosis
C. Fission
D. All

Q.94 The uterus of the female reproductive system opens into the?
A. Placenta
B. Birth canal
C. Cervix
D. All of these

Q.95 During birth which of following act as birth canal?
A. Oviduct
B. Ovary
C. Uterus
D. Vagina

Q.96 The event happens in menstrual cycle when level of progesterone declines:
A. Ovulation
B. Beginning of menses
C. Corpus luteum formation
D. Maturation of ovarian follicle

Q.97 Which term refers to the formation of egg cells that begins in the developing ovaries of a female fetus?
A. Meiosis
B. Ovulation
C. Fertilization
D. Oogenesis

Q.98 Human embryo remains enclosed in:
A. Amniotic sac
B. Amnion
C. Chorion
D. Allantois

Q.99 The time when the sex organs start to become active is called:
A. The fertile period
B. Adulthood
C. Pregnancy
D. Puberty

Q.100 Which one of the following statements is incorrect?
A. Eggs in the ovaries ripen when they meet a sperm
B. Girls are born with thousands of eggs in their ovaries
C. Hormones control the release of the egg from the ovary
D. One egg is released from the ovary about every month

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Q.101 Which of the following is not a true characteristic of gametocytes?
A. Male gametocytes are called spermatocytes
B. Gametocytes divide by mitosis into other gametocytes
C. Female gametocytes are called oocytes
D. They are eukaryotic somatic cells

Q.102 The human menstrual cycle generally repeats after how man days?
A. 20 days
B. 28 days
C. 10 days
D. 40 days

Q.103 The total gestation period (pregnancy) is usually about:
A. 28 days
B. 250 days
C. 280 days
D. 300 days

Q.104 Sexual characteristics in females develop during?
A. Menstruation
B. Ovulation
C. Puberty
D. Birth

Q.105 In female reproductive system, ovulation starts:
A. After menstruation
B. After proliferative phase
C. After secretory phase
D. Before proliferative phase

Q.106 Which of the following is not a secondary character in females?
A. Shoulders broaden
B. Egg production
C. Enlarge breast
D. None of these

Q.107 Proliferative phase is also called:
A. Menstrual phase
B. Secondary phase
C. Secretory phase
D. None of these

Q.108 In human only one ovum is usually discharged from the ovary at one time this phenomenon is called?
A. Ovulation
B. Menstruation
C. Oestrous
D. All of these

Q.109 In which week of pregnancy organogenesis starts:
A. 12th
B. 8th
C. 14th
D. 16th

Q.110 During menstruation, which of the following sheds off?
A. Epimetrium
B. Endometrium
C. Both
D. Myometrium

SEXUALLY TRANSMITTED DISEASES

Q.111 During birth central nervous system of infants can be damaged by:
A. Syphilis
B. Genital herpes
C. Gonorrhoea
D. HPV

Q.112 The sexually transmitted disease caused by *Treponema pallidum* is:
A. Syphilis
B. Gonorrhoea
C. Genital Herpes
D. AIDS

Q.113 Gonorrhoea is caused by _____.
A. Gram positive bacteria
B. *Neisseria gonorrhoea*
C. Both A and B
D. None

OUT OF SYLLABUS ☺☺☹

Q.114 Which of the following is an ovoviviparous organism?
A. Reptiles
B. Mammals
C. Frog
D. Duckbill platypus

Q.115 The animals which involves development of embryo inside female body are called:
A. Internal fertilization
B. Viviparous
C. Oviparous
D. Both A & B

Q.116 Asexual reproduction requires only a single parental organism which gives rise to offspring by?
A. Meiotic cell division
B. Mitotic cell division
C. Both A and B
D. None of these

Q.117 Cryptorchidism is a condition where?
A. One of both testes are not developed
B. One or both testes fail to descend into the scrotum
C. One or both testes are not formed
D. None of these

Q.118 In viviparous animals:
A. External fertilization leads to embryo formation
B. Internal fertilization leads to embryo formation
C. External development leads to embryo formation
D. None of the above

Q.119 Off springs produced as a result of asexual reproduction are:
A. Similar to parents
B. Identical to parents
C. Different to parents
D. None of these

Q.120 Parthenocarpy is induced by:
A. Gibberellins
B. Auxins
C. Cytokinins
D. Abscisic acid

Q.121 Which is a viviparous?
A. Duck
B. Goat
C. Frog
D. Lizard

Q.122 In cloning, nucleus is implanted in:
A. Zygote
B. Egg cell
C. Sperm
D. Somatic cell

Q.123 Sperms have origin?
A. Ectodermal
B. Mesodermal
C. Endodermal
D. None of these

Q.124 Development of an egg into zygote without fertilization is called?
A. Parthenocarpy
B. Apomixes
C. Parthenogenesis
D. All of these

Q.125 In sexual reproduction, plants have diplohaplontic life cycle with alternating?
A. Haploid sporophyte and diploid gametophyte generations
B. Diploid sporophyte and diploid gametophyte generations
C. Haploid sporophyte and haploid gametophyte generations
D. Diploid sporophyte and haploid gametophyte generations

Q.126 A woman receives her X chromosome from:
A. Her mother only
B. Both her mother and her father
C. Her father only
D. Extra nuclear DNA in her mother's egg

Q.127 To overcome infertility, which technique is used:
A. In vitro fertilization
B. In vivo fertilization
C. Both A and B
D. None of these

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Q.128 Which lytic enzyme is released by the sperm?
A. Trypsin
B. Helicase
C. Testosterone
D. Hyaluronidase

Q.129 The animals in which there are separate male and female individuals are called?
A. Unisexual
B. Bisexual
C. Asexual
D. Hermaphrodite

Q.130 Which method is of asexual reproduction?
A. Sporulation
B. Apomixes
C. Fission
D. All of these

Q.131 What is an example of an oviparous mammal?
A. Penguin
B. Spiny anteater
C. Shark
D. Elephant

Q.132 Which characteristic is not of identical twins?
A. Produced by separation of two blastomeres
B. Produced asexually
C. Produced when embryo is at two cell stage
D. Have different genetic makeup

Q.133 Viviparous animals are those in which?
A. Internal fertilization with external development in eggs
B. Internal fertilization and internal development followed by hatching of egg
C. External fertilization with external development
D. Internal fertilization with internal development inside female body

Q.134 In asexual reproduction offspring are genetically?
A. Identical to the parents
B. Identical if mutations do not occur.
C. Non identical to the parents
D. Both A and B

ANSWER KEY

1	D	21	D	41	C	61	D	81	A	101	D	121	B
2	D	22	D	42	D	62	B	82	B	102	B	122	B
3	D	23	D	43	B	63	C	83	A	103	C	123	D
4	A	24	A	44	A	64	D	84	C	104	C	124	A
5	B	25	C	45	B	65	B	85	B	105	B	125	D
6	D	26	D	46	C	66	D	86	C	106	B	126	B
7	A	27	B	47	B	67	B	87	B	107	D	127	A
8	D	28	C	48	A	68	B	88	B	108	A	128	D
9	A	29	B	9	C	69	C	89	B	109	B	129	A
10	B	30	D	50	C	70	D	90	C	110	B	130	D
11	A	31	D	51	C	71	A	91	B	111	A	131	D
12	C	32	D	52	D	72	C	92	C	112	A	132	D
13	B	33	D	53	A	73	D	93	B	113	C	133	D
14	D	34	A	54	A	74	B	94	B	114	D	134	A
15	D	35	D	55	A	75	A	95	D	115	D		
16	B	36	B	56	B	76	A	96	B	116	B		
17	D	37	A	57	D	77	C	97	D	117	B		
18	B	38	A	58	B	78	C	98	B	118	B		
19	D	39	B	59	D	79	C	99	D	119	B		
20	D	40	D	60	B	80	B	100	a	120	B		

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12 TOPIC SUPPORT & MOVEMENT

PRACTICE EXERCISE

CARTILAGE

Q.1 Cartilage is a form of:
A. Cardiac tissue
B. Connective tissue
C. Epithelial tissue
D. Nervous tissue

Q.2 Which type of cartilage is the most abundant in human body?
A. Hyaline cartilage
B. Elastic cartilage
C. Fibrocartilage
D. None of these

Q.3 Which of the following is not an important function of bone?
A. Regulation of ion concentration
B. Muscular contraction
C. Organ and nerve protection
D. Regulation of pH through hydration

Q.4 Which of the following cells secrete flexible, elastic, non-living matrix collagen?
A. Osteocytes
B. Osteoclasts
D. Chondrocytes
D. Osteoblasts

Q.5 Cartilage has living cells that are called:
A. Osteocytes
B. Osteoblasts
C. Osteoclasts
D. Chondrocytes

Q.6 What is not true about cartilage?
A. There are many blood vessels in the cartilage
B. It is a form of connective tissue
C. It covers ends of the bone at the joint
D. Both A and B

Q.7 What are osteocytes?
A. White blood cell
B. Bone cell
C. Brain cell
D. None of these

Q.8 Hyaline cartilage forms joint between:
A. Growing bone
B. Mature bones
C. Lamellar bone
D. Secondary bone

Q.9 Accumulation of crystals in cartilage is called:
A. Osteoarthritis
B. Gout
C. Pseudogout
D. None

Q.10 The fibrous connective tissue which attaches bone to bone is called:
A. Tendon
B. Ligament
C. Reticular tissue
C. Cartilage

TYPES OF MUSCLES

Q.11 Which one of the following is not a character of cardiac muscles?
A. Striated and branched
B. Multinucleated
C. Self-excitatory
D. None of these

Q.12 Muscles are composed of:
A. Silica
B. Polyester threads
C. Group of cell fibers
D. Calcium and phosphorus

Q.13 Skeletal muscles are made up of:
A. Actin
B. Myosin
C. Both A & B
D. Actin, myosin and tropomyosin

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Q.14 Cardiac muscles differ from skeletal muscles by which of the following property?
A. Structure
B. Involuntary control
C. Calcium binding protein
D. Sarcotubular system

Q.15 Vertebrates have which of the following?
A. Cardiac muscles
B. Skeletal muscles
C. Smooth muscles
D. ALL A, B, C

Q.16 It is a property of cardiac myocytes:
A. Voluntary control
B. Unstripped
C. Fatigue resistance
D. Spindle shaped cell

Q.17 Why skeletal muscles are called striated muscles?
A. Appear darker than smooth muscles by naked eye
B. Alternating dark and light bands appear on their surface when visualized by naked eye
C. Alternating dark and light bands appear on their surface when visualized via a microscope
D. All of these

Q.18 Smooth muscles, cardiac muscles and organs are regulated by which of the following?
A. Central nervous system
B. Parasympathetic nervous system
C. Sympathetic nervous
D. Autonomic system

Q.19 Striated skeletal muscle cells are under:
A. Voluntary control
B. Involuntary control
C. Both A and B
D. None of these

Q.20 Which of the following muscle fiber contains single nucleus?
A. Smooth muscle
B. Cardiac muscle
C. Both A and B
D. Skeletal muscle

Q.21 Which of the following grouping is incorrect?
A. Skeletal, striated, voluntary
B. Cardiac, striated, involuntary
C. Cardiac, striated, voluntary
D. Both B and C

Q.22 An entire skeletal muscle is surrounded by:
A. Sarcolemma
B. Microtubules
C. Both A and B
D. Epimysium

Q.23 The fibrous connective tissue which attaches muscle to bone is called:
A. Tendon
B. Ligament
C. Reticular tissue
D. Cartilage

Q.24 What is true about skeletal muscle cell?
A. It has light and dark band
B. It has only one muscle
C. It is under involuntary control
D. None of these

Q.25 It is present in cardiac muscles but absent in smooth muscles:
A. Tropomyosin
B. Actin
C. Troponin
D. Myosin

Q.26 Which of the following muscles is involuntary and non-striated?
A. Skeletal muscle
B. Smooth muscle
C. Cardiac muscle
D. None

Q.27 Which is not true for cardiac muscle?
A. No distinct nucleus
B. Branched
C. Involuntary
D. Intercalated disc

Q.28 Unique feature of cardiac muscle cell is:
A. Intercalated disc
B. Involuntary
C. Striation
D. All

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Q.29 Skeletal muscle associated with skeleton form:
A. Body movement
B. ATP
C. Skeletal system
D. Heat

Q.30 Cardiac muscles are found in:
A. Gut
B. Heart
C. Bladder
D. Limbs

STRUCTURE OF SKELETAL MUSCLES

Q.31 What structure marks the separation between two sarcomeres?
A. I band
B. H zone
C. A band
D. Z disc

Q.32 Skeletal muscle is composed of?
A. Muscle fibrin
B. Muscle fibers
C. Sarcomere
D. None of these

Q.33 Sarcoplasm of the muscle fiber is similar to
A. Cytoplasm of other cell
B. Nucleoplasm
C. Mitochondria
D. Cell membrane

Q.34 Sarcomere attach end to end to form:
A. Myofibril
B. Muscles
C. Muscle fiber
D. None of these

Q.35 Line at center of A band is:
A. Z line
B. M line
C. H zone
D. I band

Q.36 Which of the following is anisotropic?
A. A band
B. I band
C. M line
D. Z line

Q.37 Region between two successive Z lines is:
A. Sarcomere
B. H zone
C. M line
D. A band

Q.38 Cross bridges are found on:
A. Actin
B. Myosin
C. Troponin
D. Tropomyosin

Q.39 The main unit of thick filament is:
A. Myofibril
B. Actin
C. Myosin
D. Z-line

Q.40 Myosin filaments are how many times thick as compared to actin filament?
A. 3 times
B. 6 times
C. 4 times
D. 8 times

Q.41 Which of the following is not true about muscle fibers?
A. Better developed for slow sustained activities
B. For energy, they depend on anaerobic procedures
C. Myoglobin content is high
D. Possess mitochondria in huge numbers

Q.42 A smallest contractile unit of muscle contraction called sarcomere is the area between two?
A. H zone
B. M line
C. Z line
D. Z zone

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Q.43 Which of the following is true about sarcomeres?
A. Actin filaments are only found in the I band
B. The sarcomeres contribute to the striated appearance of smooth muscle cells
C. Sarcomeres are functional units of skeletal and smooth muscle cells
D. A band contains both actin and myosin filaments

Q.44 What is located at both sides of the A band?
A. Z-line
B. H zone
C. I band
D. Z zone

Q.45 Which of the following occurs during muscular contraction?
A. Actin slides over myosin
B. ATP supplies energy
C. Calcium ions are involved
D. All of these

Q.46 Which of the following is true about the organization of actin filaments and myosin in sarcomeres?
A. Myosin filaments appear thinner than actin filaments
B. Prior to contraction, there is no overlap between actin and myosin
C. The degree of overlap of actin and myosin affects the overall contractions
D. All of these

Q.47 Which of the following is the name of the modified endoplasmic reticulum found in muscle cells?
A. T-tubule
B. Sarcomere
C. Cytoplasmic reticulum
D. Sarcoplasmic reticulum

Q.48 Muscles are composed of?
A. Silica
B. Polyester threads
C. Groups of cell fibers
D. Calcium and phosphorous

Q.49 How many thin filaments are arrayed around each thick filament within a sarcomere?
A. 2
B. 4
C. 6
D. 8

Q.50 Dark bands of skeletal muscles are:
A. Z-band
B. A band
C. I band
D. H zone

Q.51 How much of the body heat is produced by muscle tissue?
A. 15%
B. 55%
C. 30%
D. 85%

Q.52 A disc-like protein that is centrally found in sarcomeres is:
A. H line
B. I line
C. M line
D. Z line

Q.53 The functional unit of contractile system in striated muscle is:
A. Myofibril
B. Cross bridges
C. Z band
D. Sarcomere

Q.54 The length of the following is reduced when muscle contracts:
A. H-zone
B. I-band
C. Sarcomere
D. Both A & B

Q.55 The contractile protein of skeletal muscle involving ATPase activity is:
A. Actin
B. Myosin
C. Troponin
D. Tropomyosin

Q.56 Many sarcomeres in series make up the length of a:
A. Microtubules
B. Myofibril
C. Myosin filament
D. M-line

Q.57 Which is most likely to extend the entire length of a muscle fiber?
A. Sarcomere
B. Myofibril
C. Myosin filament
D. M-line

Q.58 The A band further divides by:
A. Z-line
B. A band
C. H zone
D. Z zone

Q.59 A muscle of fascicle is a:
A. Bundle of connective tissue
B. Bundle of myofibrils
C. Bundle of muscle fibres
D. Muscle cells

Q.60 The space between two Z lines constitutes the:
A. Sarcolemma
B. Sarcophagus
C. Sarcoplasm
D. None of these

Q.61 Bright region in A band is:
A. M line
B. Z line
C. H zone
D. Sarcomere

Q.62 Myofilament is made of:
A. Protein
B. Lipids
C. Carbohydrates
D. All of these

Q.63 Major regulatory protein in muscle is:
A. Myosin
B. Myosin-actin
C. Troponin-tropomyosin
D. Troponin-tropomyosin-actin

Q.64 Sarcoplasm is different form cytoplasm:
A. It contains sarcoplasmic reticulum
B. It contains glycogen
C. It contains glycogen and oxygen binding protein, myoglobin
D. All of these

MECHANISM OF SKELETAL MUSCLE CONTRACTION

Q.65 According to sliding filament theory of muscle contraction, which of the following are functions of ATP?
A. ATP does all of these things during muscle contraction
B. It allows the myosin head to detach from the actin filament
C. It moves tropomyosin off of actin binding sites
D. Both A and B

Q.66 What type of enzyme is myosin?
A. ATP synthase
B. ATP hydrolase
C. ADP hydrolase
D. ADP synthase

Q.67 Which of the following proteins does not play a fun force-tension curve of muscle contraction?
A. Titin
B. Myosin
C. Actin
C. All of these

Q.68 Calcium during muscle contraction binds with:
A. Tropomyosin
B. Troponin C
C. Troponin I
D. Troponin T

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Q.69 When a muscle fiber shortens, the following shortens:
A. Actin filament
B. Sarcomere
C. Both A and B
D. Myosin

Q.70 Rigor mortis after death results due to which?
A. Decrease in body temperature after death.
B. Accumulation of rigid proteins molecules in sarcoplasm
C. Death of tissue due to unavailability of 02.
D. Unavailability of ATP, which is necessary to break

Q.71 What is hydrolysed during muscle contraction?
A. ACP
B. ADP
C. NAD
D. ATP

Q.72 Actin and myosin are _____ proteins.
A. Globular
B. Fibrous
C. Functional
D. Both A and B

Q.73 Skeletal muscles cause:
A. Constriction of blood vessels
B. Heart beat
C. Dilation of pupil
D. Eye movement

Q.74 Which of the following is true of troponin and tropomyosin?
A. Troponin binds to myosin and tropomyosin binds to actin
B. Tropomyosin binds to actin and prevents the myosin head from binding to actin
C. Both a and b
D. None of these

Q.75 How many ATP are required for one cycle of muscle contraction and relaxation?
A. 1
B. 3
C. 2
D. 4

Q.76 The contraction of muscle by actin and myosin is described by which biological theory?
A. Endosymbiotic theory
B. Central Dogma theory
C. Cross-bridge theory
D. Sliding filament theory

Q.77 The muscle which moves a body part away from the midline of the body is:
A. Flexor muscles
B. Extensor muscles
C. Adductor muscles
D. Abductor muscles

Q.78 During a muscular contraction, which of the following elements maintains constant length?
A. I band
B. H zone
C. A band
D. Sarcomere

Q.79 Which of the following step occurs immediately after binding of Ca^{2+} with troponin molecule during muscle contraction?
A. Binding sites of actin get attached to the myosin head
B. Troponin uncovers the actin binding sites
C. Ca^{2+} goes back inside sarcoplasmic reticulum
D. Tropomyosin gets removed from the binding sites of actin filaments

Q.80 What occurs when the thin actin and thick myosin filaments slide past each other?
A. Muscle relaxation
B. Muscle contraction
C. Muscle twitch
D. None of these

Q.81 The muscle which moves a body part towards the midline of the body is:
A. Flexor muscles
B. Extensor muscles
C. Adductor muscles
D. Abductor muscles

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Q.82 Which of the following action is caused by skeletal muscle:
A. Constriction of blood vessel
B. Eye movements
C. Heartbeat
D. Dilation of pupil

Q.83 Which of the following molecules binds to troponin during muscle contraction, triggering tropomyosin to move away from the actin binding sites and allowing the myosin head to form a cross bridge?
A. ADP
B. Calcium
C. Sodium
D. ATP

Q.84 What is the purpose of calcium in the muscles?
A. It helps move the myosin head into a high-energy position
B. It allows tropomyosin to be pulled away from the actin filament
C. Both a and b
D. None of these

Q.85 Which of the following proteins directly interacts with the myosin-binding site on actin?
A. Tropomyosin
B. Troponin
C. both a and b
D. none of these

Q.86 Which of the following sections of a sarcomere does not shorten during contraction?
A. I band
B. H zone
C. A band
D. None of these

Q.87 Which of the following does not occur during skeletal muscle contraction?
A. ATP is hydrolysed
B. Calcium binds to myosin heads
C. Both A and B
D. None of these

Q.88 Which two proteins are the major components of myofibrils, allowing for muscle fibre contraction?
A. Myosin and cartilage
B. Actin and myosin
C. Lamellae and actin
D. Only myosin

Q.89 Tropomyosin binds to _____and prevents the myosin from sliding up the actin filament.
A. Myosin
B. Actin
C. Myosin filament
D. Both B and C

Q.90 Nerves that are innervating muscle fibers are called:
A. Sensory nerves
B. Motor neurons
C. Cranial nerves
D. Optic nerve

Q.91 Which disappears during muscles contractions?
A. M line
B. H zone
C. Z line
D. A band

Q.92 Role of sarcoplasmic reticulum prior to muscle contraction:
A. It actively pumps calcium ions into its lumen
B. It releases calcium ions by active transport
C. It creates the proteins needed to cover the actin filaments
D. It releases calcium once an actin potential reaches the sarcolemma

TYPES OF JOINTS

Q.93 Which of the following movements are possible in pivot joint?
A. Flexion and extension
B. Adduction and abduction
C. Rotation
D. Extension flexion and rotation

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Q.94 Type of synovial joints:
A. Hinge joint
B. Ball and socket joint
C. Both A and B
D. Fibrous joint

Q.95 Humerus forms joints with:
A. Clavicle
B. Sternum
C. Hyoid
D. Tibia

Q.96 Which joint is present in neck, due to which it shows movement?
A. Pivot joint
B. Saddle joint
C. Hinge joint
D. Ball and socket joint

Q.97 The hinge joint and ball and socket joints are the types of:
A. Freely movable joints
B. Slightly movable joints
C. Immovable joints
D. None of these

Q.98 Fluid present in synovial joint is:
A. Synovial fluid
B. Pericardial fluid
C. Plural fluid
D. Interstitial fluid

Q.99 Metacarpal joint is an example of:
A. Condyloid joint
B. Saddle joint
C. Hinge joints
D. Ball and socket joint

Q.100 The connection between two bones is:
A. Joint
B. Tendon
C. Suture
D. Fissure

Q.101 Joints in which both muscle and bone are in same phase angle:
A. Ball and socket
B. Fibrous
C. Cartilaginous
D. Hinge joint

Q.102 Which of the following comes under structural classification?
A. Synchondroses
B. Sutures
C. Gomphosis
D. All of these

Q.103 Joints are classified on the basis of:
A. The amount of movement allowed by them
B. Nature of structure they have
C. Type of bones they join
D. Both B and C

Q.104 Cartilaginous joints have:
A. Slight movement
B. Free movement
C. No movement
D. Both A and B

Q.105 A type of joint found at the articulation between teeth and the sockets of the maxilla is:
A. Syndesmosis
B. Sutures
C. Gomphosis
D. None of these

Q.106 Humerus forms _____ joint with scapula.
A. Ball and socket
B. Hinge
C. Pivot
D. Fibrous

Q.107 Which the following is not the unique features of synovial joint?
A. Articular capsule
B. Synovial fluid
C. Articular cartilage
D. Fibrocartilage

Q.108 How many types of joints are present in body?
A. 3
B. 4
C. 5
D. 2

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Q.109 In cartilaginous joint:
A. Joint cavity is absent
B. Joint cavity is present
C. Both A and B
D. None

Q.110 Syndesmosis is present between:
A. Short bones
B. Long bones
C. Short and long bone
D. Can be present any where

Q.111 Xiphisternal joint is present between:
A. Body of clavicle and xiphoid process
B. Body of sternum and xiphoid process
C. Body of clavicle and xiphoid process
D. Body of femur and xiphoid process

GOUT AND ARTHIRITIS

Q.112 Inflammation of joint is known as:
A. Sciatica
B. Arthritis
C. Spondylosis
D. Disc-slip

Q.113 All of the following are inflammatory arthritis except:
A. Rheumatoid Arthritis
B. Osteoarthritis
C. Gouty arthritis
D. Osteomyelitis

Q.114 Chronic arthritis is:
A. Rheumatoid arthritis
B. Osteoarthritis
C. Gouty arthritis
D. None

Q.115 □□□□□□hronic and inflammatory type of arthritis is:
A. Osteoarthritis
B. Rheumatoid arthritis
C. Gout
D. None

Q.116 Acute form of arthritis results from:
A. Fungal attack
B. Bacterial attack
C. Viral attack
D. Protist attack

Q.117 Gout results due to defective metabolism of:
A. Xanthine dehydrogenase
B. Xanthine carboxylase
C. Xanthine hydrogenase
D. Xanthine oxidase

Q.118 Most common site for autoimmune disease:
A. Skin and joint
B. Muscles
C. A and D
D. None

Q.119 An example of degenerative disease:
A. Rheumatoid arthritis
B. Osteoarthritis
C. Gouty arthritis
D. Osteomalcia

OUT OF SYLLABUS

Q.120 Sperms of liverworts, mosses, ferns move towards archegonia, in response to nucleic acid released by the ovum. This is an example of?
A. Chemotropic movement
B. Chemonastic movement
C. Haptonastic movement
D. Chemotactic movement

Q.121 Tibia is found in:
A. Skull
B. Lower leg
C. Face
D. Upper arm

Q.122 Biceps are:
A. Extensors
B. Flexors
C. Adductors
D. Abductors

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Q.123 Roots of a plant show which of the following?

A. Positive phototropism and negative geotropism
B. Negative tactic movement and positive tropic movement
C. Positive geotropism of stem and roots
D. Negative phototropism and positive geotropism

Q.124 Rapid movement of leaves of mimosa on touching is an example of?

A. Tropic movements
B. Growth movement
C. Nastic movement
D. Turgor movement

Q.125 Triceps are:

A. Extensor muscles
B. Flexor muscles
C. Abductive muscles
D. Strongest muscles

Q.126 Cranium contains how many bones:

A. 2
B. 4
C. 8
D. 14

Q.127 How many bones humans have in the vertebral column?

A. 52
B. 25
C. 33
D. 34

Q.128 Human eye muscles contract in:

A. 0.01 sec
B. 0.08 sec
C. 0.05 sec
D. None of these

ANSWER KEY

1	B	21	C	41	B	61	C	81	C	101	D	121	B
2	A	22	D	42	C	62	A	82	B	102	D	122	B
3	D	23	A	43	A	63	B	83	B	103	A	123	D
4	D	24	A	44	C	64	D	84	B	104	A	124	D
5	D	25	C	45	D	65	B	85	A	105	C	125	A
6	A	26	B	46	C	66	B	86	C	106	A	126	C
7	B	27	A	47	D	67	A	87	B	107	D	127	C
8	A	28	A	48	C	68	C	88	B	108	A	128	D
9	B	29	C	49	C	69	C	89	B	109	A		
10	B	30	B	50	B	70	D	90	B	110	B		
11	B	31	D	51	D	71	D	91	B	111	B		
12	C	32	B	52	D	72	B	92	B	112	A		
13	D	33	A	53	D	73	D	93	C	113	C		
14	B	34	A	54	B	74	B	94	C	114	A		
15	D	35	B	55	B	75	A	95	A	115	A		
16	C	36	A	56	B	76	D	96	A	116	B		
17	C	37	A	57	B	77	B	97	A	117	D		
18	D	38	B	58	C	78	C	98	A	118	A		
19	A	39	C	59	C	79	D	99	C	119	B		
20	A	40	A	60	D	80	B	100	A	120	A		

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13 TOPIC VARIATION & GENETICS / INHERITANCE

PRACTICE EXERCISE

MENDEL'S LAW OF INHERITANCE

Q.1 How many pairs of homologous chromosomes are present are present in *Pisum sativum*?

A. 5
B. 6
C. 7
D. 8

Q.2 A certain type of plant is only tall when it has a heterozygous genotype. If two heterozygous plants are crossed, what is the probability of their offspring will also be tall?

A. 25%
B. 1
C. 50%
D. 75%

Q.3 A pure breeding tall pea plant was crossed to dwarf plant. What will be the frequency of dwarf plants in F_2?

A. 0.25
B. 0.5
C. 0
D. 1

Q.4 Phenotypic ratio of F_2 generation of monohybrid cross:

A. 3:1
B. 9:3:3:1
C. 1:2:1
D. 9:1

Q.5 What is the phenotypic ratio for a cross between a plant with blue flowers BB and a plant with white flowers bb?

A. 25% blue, 75% white
B. 75% blue, 25% white
C. All white
D. All blue

Q.6 Composite of an organism's observable characters or traits is called:

A. Genotype
B. Phenotype
C. Recombination
D. Replication

Q.7 In a dihybrid cross, what fraction of offspring will be homozygous for both traits?

A. 1/2
B. 1/4
C. 1/8
D. 1/16

Q.8 Genotype ratio of Mendel's law of independent assortment is which of the following?

A. 3:1
B. 1:02:01
C. 9:3:3:1
D. None of these

Q.9 Your neighbour has a flower garden in which there are red flowers and white flowers. These flowers are diploid organisms, and flower colour is an autosomal trait. The gene for red flowers (R) is dominant, while the gene for white flowers (r) is recessive. Which of the following is the genotype of a white flower?

A. RR
B. rr
C. Rr
D. Rr

Q.10 Which of the following is heterozygote?

A. RR
B. rr
C. Both A & B
D. None of these

Q.11 Which of the following represents a phenotype?

A. X-linked recessive
B. Aa
C. Autosomal dominant
D. Brown hair

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Q.12 Homozygous chromosomes include which of the following?
A. Diploid cells
B. Polyploid cells
C. Both A and B
D. None of these

Q.13 One plant is homozygous dominant for purple flowers, and the other is homozygous recessive for white flowers. What fraction of the F_2 population will have white flowers?
A. 1/4
B. 1/2
C. 1/8
D. 1/16

Q.14 A monohybrid cross yielded 3:1 in F_2. What could be mode of inheritance?
A. Segregation
B. Independent assortment
C. Both A and B
D. None of these

Q.15 In peas, the gene for yellow color (C) is dominant to the gene for green color (c). To determine the genotype of an unknown pea, what kind of kind of pea should you cross with it?
A. Another unknown green
B. Any genotype
C. Homozygous dominant
D. Homozygous recessive (cc)

Q.16 Your neighbor has a flower garden in which there are red flowers and white flowers. These flowers are diploid organisms, and flower color is an autosomal trait. The gene for red flowers (R) is dominant, while the gene for white flowers (r) is recessive. Which of the following could be the genotype of a red flower?
A. Rr
B. RR, Rr, or rr
C. rr
D. RR or Rr

Q.17 A scientist has discovered a new species of flower in which purple coloration is dominant to white. He wishes to know the genotype of a specific purple flower. Which of the following crosses would give him a definitive answer for the purple flower genotype?
A. Unknown purple x homozygous purple
B. Unknown purple x white
C. Unknown purple x unknown purple
D. None of these

Q.18 In nature, garden pea is which of the following?
A. Cross fertilized
B. Cross pollinated
C. Self-fertilized
D. None of These

Q.19 Which of the following characters of pea plant is dominant?
A. Yellow pods
B. White flowers
C. Wrinkled seeds
D. Axial flowers

Q.20 Which of the following is monohybrid cross?
A. TTYy x Ttyy
B. TT x tt
C. Both A and B
D. None of these

Q.21 During test cross, if all off springs are phenotypically dominant then parents are?
A. Heterozygous
B. One homozygous other heterozygous
C. Homozygous
D. None of these

Q.22 A pure breeding tall plant was crossed with dwarf plant. What would be probability of "Tt" genotype in F_2?
A. 0.25
B. 0.5
C. Both A & B
D. None of these

Q.23 Round shaped pea seed is crossed with wrinkled shaped seed. This refers to:
A. P_1 generation
B. F_1 generation
C. F[illegible]ation
D. F_3 generation

Q.24 Number of gametes produced by an organism having genotype of RrPp:
A. 2
B. 3
C. 4
D. 5

Q.25 What would be the color of flowers in F_1 generation when a 4'O clock plant having red colored flower is crossed with plant having white colored flower:
A. Half purple and half red
B. Half white and half red
C. All purple
D. All white

Q.26 Mendel's law of inheritance were presented in:
A. 1861
B. 1865
C. 1892
D. 1857

Q.27 Mendel studied seven pairs of traits of pea plant that were present on _____ chromosomes.
A. 4
B. 7
C. 8
D. 9

Q.28 True breeding variety is produced by which of the following?
A. Cross fertilization
B. Self-fertilization
C. Both A and B
D. None of the above

Q.29 A pea plant with yellow seed was crossed to a plant having green seeds. What will happen in F_1 if plants are true breeding?
A. Half seeds will be yellow
B. All seeds will be green
C. Both will be present in ration of 1:2:1
D. All seeds will be yellow

Q.30 How many gametes are produced from genes of diploid organism which is heterozygous for 4 loci?
A. 4
B. 8
C. 12
D. 32

Q.31 Mendel laid the foundation of:
A. Classical genetics
B. Modern genetics
C. Cell biology
D. Neo-Darwinism

MULTIPLE ALLELES

Q.32 ABO system has different phenotype on the basis of specific _____ on the surface of RBCs
A. Antibody
B. Antigen
C. Anti A-antigen
D. Anti O-antigen

Q.33 ABO blood group system was discovered in:
A. 1811
B. 1901
C. 1801
D. 1911

Q.34 A man with type A blood and a woman with type AB^+ blood have a child. Which blood type is impossible for that child to have?
A. A^-
B. B^-
C. AB^+
D. O^-

Q.35 ABO blood group system was first introduced by:
A. Landsteiner
B. Bernstein
C. Morgan
D. Fleming

Q.36 ABO has how many phenotypes?
A. 3
B. 4
6
D. 8

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Q.37 A man with type AB blood marries a woman with type A blood. Which of the following blood types might their sons inherit?

A. Type A only
B. Type B only
C. Type AH only
D. Type A, type B, or type AB

Q.38 Assume that blood type is not a sex-linked trait. A mother with genotype "A/O" and a father with genotype "A/B" could not have a child with which blood type?

A. A
B. B
C. AB
D. O

Q.39 Assuming that blood type is not a sex-linked trait, what is the probability that a mother with genotype "A/O" and a father with genotype "A/B" will have a child with type B blood?

A. 50%
B. 25%
C. 75%
D. None of these

Q.40 A man with blood group A marries a woman of blood group "B". Both are heterozygous. What is the offspring's having phenotype" O"

A. 10%
B. 25%
C. 50%
D. 75%

Q.41 Rh blood group system is:

A. Multiple allele
B. Polygenic
C. Both A and B
D. None

Q.42 If father have blood group A and mother have blood group B then children can have:

A. A only
B. AB only
C. B only
D. A, B, AB, O all

GENE LINKAGES AND CROSSING OVER

Q.43 The number of linkage groups in humans is?

A. 24
B. 23
C. 1/23
D. 1/24

Q.44 Genes of same chromosomes are:

A. Linked
B. Non-linked
C. Always assort independently
D. Both B and C

Q.45 Crossing over brings about:

A. Recombinant genes
B. New traits in species
C. Genetic recombination
D. New species

SEX LINKAGES IN DROSOPHILA

Q.46 In Morgan's experiment when males and females of F_1 generation mate with each other and produce F_2 generation. The number of red eyed males were:

A. 2059
B. 2459
C. 782
D. 1101

Q.47 Colored eyes in male *Drosophila* is due to:

A. Hemizygous
B. Homozygous
C. Heterozygous
D. None

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SEX LINKAGE IN HUMAN GENETICS OF HEMOPHILIA

Q.48 A trait determines by a gene on the X chromosome is said to be:
A. Pseudoautosomal
B. Sex linked
C. Both A & B
D. None of the above

Q.49 Haemophilia B is due to abnormality of factor?
A. VIII
B. X
C. IX
D. XI

Q.50 Which of the following is not sex linked recessive trait?
A. Testicular feminization syndrome
B. Color blindness
C. Haemophilia
D. Hypophosphatemic rickets

Q.51 When a hemophilia carrier woman marries a normal man, who among her offspring may be affected?
A. All her children
B. Half of her daughters
C. All her daughters
D. Half of her sons

Q.52 Which traits cannot pass from father to all of his sons?
A. Sex-linked recessive
B. Autosomal
C. Y linked
D. None of theses

Q.53 It is a autosomal recessive allele:
A. Hemophilia a
B. Hemophilia b
C. Hemophilia c
D. Red monochromacy

Q.54 Hemophilia is:
A. Mendelian disorder
B. Chromosomal disorder
C. Both A and B
D. None of above

Q.55 Traits passed form maternal grandfather to grandson:
A. X-linked dominant
B. Y-linked
C. Autosomal
D. X-linked recessive

Q.56 Which of the following is inherited via an autosomal recessive allele?
A. Hemophilia
B. Huntington's disease
C. Color-blindness
D. Cystic fibrosis

Q.57 For a single gene trait, a number of genetic disorders are caused when an individual inherits?
A. Two dominant alleles
B. One dominant allele
C. One recessive allele
D. Two recessive alleles

Q.58 Which trait is passed directly from father to son?
A. Y linked
B. X linked
C. X linked dominant
D. X linked recessive

Q.59 Chances for a birth of male and female in humans:
A. 1:2
B. 1:1
C. 2:1
D. 2:2

Q.60 A gamete without sex gamete is called:
A. Male gamete
B. Nullo gamete
C. Advanced gamete
D. None

Q.61 Genes of baldness can express only in the presence of hormone:
A. Progesterone
B. Estrogen
C. Aldosterone
D. LH

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Q.62 Defective genes are present on X chromosome. It will normally be transmitted in male off springs by:
A. Father
B. Mother
C. Segregation
D. Mutation

Q.63 A single ovum of human being contains:
A. X chromosome
B. XX chromosome
C. Y chromosome
D. May be all

Q.64 How many sex chromosomes are present in human?
A. 2
B. 3
C. 1
D. 4

OUT OF SYLLABUS

Q.65 Which of the following is male determining gene in humans?
A. Tfm
B. SRY
C. Both A and B
D. None of these

Q.66 Number of chromosomes in grass hopper is:
A. Male: 23, Female: 24
B. Male: 24, Female: 23
C. Male: 23, Female: 23
D. Male: 24, Female: 24

Q.67 Male is haploid in:
A. Humans
B. *Drosophila*
C. Birds
D. Grasshopper

Q.68 ZZ/ZW type of sex determination is found in:
A. Humans
B. Fruit fly
C. Moths
D. Grasshopper

Q.69 Number of autosomes in liver cells of humans:
A. 44
B. 23
C. 22
D. 46

Q.70 In males, the gene for colour blindness is located in _____.
A. X-chromosome
B. Y-chromosome
C. Both X and Y chromosomes
D. Either X or Y chromosome

Q.71 Which of the following is called the sex-linked disease?
A. Leukemia
B. Alzheimer's
C. Malignancy
D. Colour blindness

Q.72 How many sex chromosomes are present in a human being?
A. 1 pair
B. 2 pairs
C. 3 pairs
D. 4 pairs

Q.73 Skin colour in man is controlled by how many pairs of genes:
A. 1
B. 2
C. 3
D.

Q.74 Inheritance in man is traced by which of the following?
A. Mathematical method
B. Statistical method
C. Genetic method
D. Pedigree method

Q.75 In which organisms males are haploid?
A. Aphids
B. Mosquito
C. Butterfly
D. Honey bee

Q.76 Visible genetic traits include which of the following?
A. Hair color
B. Eye color
C. Number of limbs
D. All of these

Q.77 All of the following are continuously varying traits except:
A. Kernel color in wheat
B. Skin color in humans
C. Height in humans
D. Tongue rolling in humans

Q.78 Gene for blue opsin is present on which chromosome?
A. 6
B. 7
C. 8
D. 11

Q.79 A woman is a carrier for a sex-linked disorder. She marries a man whose father had the disorder, and whose mother did not. The man is unaffected. If they have a child, what is the probability that the child is also a carrier?
A. 25%
B. 50%
C. 75%
D. 1%

Q.80 Red-green colorblindness is an X-linked recessive disorder. Jacob's paternal grandfather and father are both colorblind, but his mother has two normal alleles. What is the probability that Jacob is red-green colorblind?
A. 0%
B. 25%
C. 50%
D. 75%

Q.81 Bombay phenotype shows:
A. Dominance
B. Pleiotropy
C. Epistasis
D. Polygenic inheritance

Q.82 In males, gene for color blindness is present on:
A. Y chromosome
B. Autosome 11
C. X chromosome
D. Autosome 1

Q.83 The phenomenon in which the effect of one allele in heterozygous genotype completely masks the effect of other is called:
A. Codominance
B. Dominance
C. Incomplete dominance
D. Complete dominance

Q.84 Inbreeding increases:
A. Heterozygous
B. Genetic diversity
C. Genetic linkage
D. Homozygous

Q.85 Interaction between genes occupying different loci is known as?
A. Dominance
B. Pleiotropy
C. Epistasis
D. None of these

Q.86 Baldness is most frequent in which of the following?
A. Men
B. Women
C. Both A and B
D. Children

Q.87 Such inheritance in which traits vary quantitatively is:
A. Continuously varying trait
B. Incomplete dominance
C. Test cross
D. Test cross

Q.88 If a heterozygous individual shows the complete effect of both alleles, the type of inheritance would be?
A. Complete dominance
B. Non dominance
C. Incomplete dominance
D. Codominance

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Q.89 **A human cell from the ovary has 22 chromosomes and an X chromosome. It is which of the following?**
A. Egg
B. Sperm
C. Somatic cell
D. Gamete

Q.90 **The ordered list of loci known for a particular genome is called:**
A. Gene map
B. Loci
C. Alleles
D. Chromosomes

Q.91 **Characteristics feature of male *Drosophila* is:**
A. Sex combs on back legs
B. Sex combs on front legs
C. Sex combs on middle legs
D. None of them

Q.92 **Mutations in the sequence of genes are carried by only:**
A. Locus
B. Population
C. Allele
D. Genetic sequence

Q.93 **Most protein coding genes are found in:**
A. Repetitive DNA
B. RNA
C. Single copy DNA
D. None of these

Q.94 **A woman receives his X chromosome from:**
A. His mother only
B. Both her mother and her father
C. His father only
D. Extra nuclear DNA in her mother's egg

Q.95 **If replication was completely conservative then?**
A. One heavy and one light strand would be seen
B. Both heavy strands would be seen
C. Both light strands would be seen
D. None of these

Q.96 **All of the following are continuously varying traits except?**
A. Kernel colour in wheat
B. Skin colour in humans
C. Height in human
D. Tongue rolling in humans

Q.97 **Mating between relatives is called which of the following?**
A. Ex breeding
B. Breeding
C. Inbreeding
D. Outbreeding

Q.98 **Mating with non-relatives is known as?**
A. Inbreeding
B. Breeding
C. Outbreeding
D. None of these

Q.99 **The gene for muscular dystrophy is X-linked. A female carrier and an unaffected male have one daughter together that is homozygous. The daughter has a son with unaffected male. What is the probability that the son will not be affected?**
A. 25%
B. 50%
C. 75%
D. 0

Q.100 **Gametes consist of:**
A. Two alleles
B. Only one allele of gene
C. No allele
D. None of these

Q.101 **A male and female have 6 daughters. Chances of next daughter will be:**
A. 10
B. 60
C. 50
D. 100

Q.102 **Egg is determinant of offspring's gender in:**
A. Man
B. *Drosophila*
C. Grasshopper
D. Butterfly

BASIC DEFINITION

Q.103 If both the alleles are same with respect to genes then they are called:
A. Heterozygous
B. Unicellular
C. Homozygous
D. None of these

Q.104 The process of determining the locus for particular biological traits includes:
A. Replication
B. Recombination
C. Gene Mapping
D. None

Q.105 The set of all genes in any population is termed as:
A. Population pool
B. Species pool
C. Gene pool
D. All of these

Q.106 A fully expressed allele is referred to as:
A. Dominant
B. Recessive
C. Homozygous
D. Heterozygous

Q.107 A group of interbreeding individuals belonging to a particular species and sharing a common geographic area is called:
A. Community
B. Population
C. Race
D. Family

Q.108 Filial is a Latin word. It means which of the following?
A. Spring
B. Issue
C. Progeny
D. None of these

Q.109 Pink color in flower is:
A. Phenotype
B. Genome
C. Genotype
D. Trait

Q.110 Alternative form of a gene is called:
A. Genome
B. Gene pool
C. Allele
D. Genetics

Q.111 The position of a gene on chromosome is called:
A. Locus
B. Arm
C. Position
D. Location

Q.112 The gene which cannot be determined by observing the organism is?
A. Dominant
B. Allele
C. Phenotype
D. Recessive

Q.113 Which term means "same alleles"?
A. Heterozygous
B. Hybrid
C. Homozygous
D. None of them

Q.114 Chromosomes that have different alleles of a given gene at locus is called:
A. Homozygous
B. Specialization
C. Y chromosomes
D. Heterozygous

Q.115 To form a female zygote, the sperm cell must contribute which chromosome?
A. X
B. 2X
C. Y
D. XY

Q.116 Gene is the molecular unit of which of the following?
A. DNA
B. RNA
C. Heredity
D. Genotype

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Q.117 Organisms that have one copy of each gene on each chromosome are:

A. Haploid
B. Diploid
C. Unicellular
D. None of these

Q.118 Population genetics focus on:

A. Inherited traits
B. Qualitative traits
C. Quantitative traits
D. All of these

ANSWER KEY

1	C	21	C	41	A	61	D	81	C	101	C
2	D	22	B	42	D	62	B	82	C	102	D
3	A	23	A	43	B	63	A	83	D	103	C
4	A	24	C	44	A	64	A	84	D	104	C
5	D	25	C	45	C	65	B	85	C	105	C
6	B	26	B	46	D	66	A	86	A	106	A
7	C	27	A	47	A	67	D	87	A	107	B
8	D	28	B	48	B	68	C	88	D	108	C
9	B	29	D	49	C	69	C	89	A	109	A
10	D	30	D	50	D	70	A	90	A	110	C
11	D	31	A	51	D	71	D	91	B	111	A
12	A	32	B	52	A	72	A	92	D	112	D
13	A	33	B	53	C	73	C	93	C	113	C
14	A	34	D	54	A	74	D	94	B	114	D
15	D	35	A	55	D	75	D	95	D	115	A
16	D	36	B	56	D	76	D	96	D	116	C
17	D	37	D	57	D	77	D	97	C	117	A
18	C	38	D	58	A	78	B	98	C	118	A
19	D	39	B	59	B	79	A	99	D		
20	B	40	B	60	B	80	A	100	B		

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MISCELLANEOUS QUESTIONS

Q.1 Which of the following statements is correct distinction between autotrophs and heterotrophs
A. Only heterotrophs require chemical compounds from the environment
B. Cellular respiration is unique to heterotrophs
C. Conly heterotrophs have mitochondria
D. Autotrophs but not heterotrophs can nourish themselves with nutrients that are entirely inorganic

Q.2 Growth and development of plant cells is the role of?
A. Parenchymatous cells
B. Chlorenchymatous cells
C. Meristematic cell
D. Sclerenchymatous cells

Q.3 Vascular cambium initially appears as actively dividing cells between?
A. Primary xylem and secondary xylem
B. Primary xylem and secondary phloem
C. Secondary xylem and secondary phloem
D. Primary xylem and primary phloem

Q.4 Biorhythms are also called?
A. Diurnal tempo
B. Diurnal rhythms
C. Diurnal time
D. All of these

Q.5 Platypus and panda are all representatives of which of the following?
A. Homoeothermic
B. Poikilothermic
C. Hyperthermic
D. None of these

Q.6 Which statement is incorrect about ethylene production?
A. Climacteric is burst of respiratory activity in fruit ripening
B. It is associated with ethane production
C. It helps in fruit ripening
D. It helps in fruit set

Q.7 What is the chemical characteristic of auxins?
A. Indole propionic acid
B. Indole carboxylic acid
C. Indole acetaldehyde
D. Indole acetic acid

Q.8 Gibberellins may be substituted for which color of light?
A. Red
B. Blue
C. Green
D. White

Q.9 Auxins are responsible for the promotion and growth of roots from?
A. Layering
B. Calluses
C. Cutting
D. Both B and C

Q.10 Cytokine's delay the aging of _____ leaf crops such as cabbage and lettuce.
A. Attached
B. Delayed
C. Fresh
D. Open

Q.11 Move in response to chemical signals is termed as:
A. Chemotaxis
B. Chemonlysis
C. Chemography
D. Chemosynthesis

Q.12 Which one is not a day neutral plant?
A. Cotton
B. Maize
C. Cucumber
D. Tobacco

Q.13 Klinefelter's syndrome:
A. One X chromosome is missing
B. Sex chromosome fails to segregate
C. Additional sex chromosome is present
D. None of these

Q.14 Developing seeds are rich source of which of the following?
A. Auxins
B. Gibberellins
C. Cytokinins
D. All of these

Q.15 Resumption of normal growth by a dormant embryo is called?
A. Seed dormancy
B. Fruit ripening
C. Germination
D. All of these

Q.16 The clear fluid present in the anterior chamber of eye is?
A. Optic humor
B. Spot humor
C. Vitreous humor
D. [illegible]

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Q.17 The place of attachment of leaf with the shoot is called?
A. Pith
B. Pit
C. Pulvinus
D. All of these

Q.18 Humans regulate their internal body temperature within a very narrow range. This is an example of?
A. Homeostasis
B. Evolution
C. Genetics
D. Metabolism

Q.19 Critical day length for cocklebur is which of the following?
A. 8.5 hrs.
B. 10 hrs.
C. 14 hrs.
D. 15.5 hrs.

Q.20 Terrestrial animals can tolerate dehydration by:
A. Anhydrobiosis
B. Sweating
C. Thermoregulation
D. None

Q.21 It is correct about metaphase:
A. Chromosome is thickest and largest
B. Chromosome is thinnest and shortest
C. Chromosome is thinnest and largest
D. Chromosome is thickest and shortest

Q.22 Each chromosome of a bone marrow cell has how many chromatids during anaphase?
A. No chromatid
B. 2 chromatids
C. 1 chromatid
D. Several chromatids

Q.23 Which symbiont helps in uptake of phosphorus and sulphur?
A. Bacteria
B. Virus
C. Fungi
D. Protista

Q.24 Who proposed chromosomal theory of inheritance?
A. Sutton and Boveri
B. Margulis and Schwartz
C. Morgan and Mendel
D. Johannsen and Cuvier

Q.25 The idea that opposed the idea of abiogenesis was proposed by:
A. Rudolph Virchow
B. Robert Brown
C. Robert Hooke
D. Lorenz Oken

Q.26 Which of them excretes in form of uric acid?
A. Birds
B. Human
C. Frog
D. None of these

Q.27 What is the significance of endospores?
A. They allow fungi to survive in extreme climates
B. They allow gram-negative bacteria to reproduce
C. They allow fungi to store nutrients that can survive extreme conditions
D. They are produced by gram-positive bacteria which can survive extreme conditions

ANSWER KEY

1	D	11	A	21	D
2	C	12	D	22	C
3	D	13	C	23	C
4	B	14	D	24	A
5	D	15	C	25	A
6	C	16	D	26	A
7	D	17	C	27	D
8	A	18	A		
9	D	19	A		
10	C	20	A		

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Topic 1 INTRODUCTION TO FUNDAMENTAL CONCEPTS OF CHEMISTRY

PRACTICE EXERCISE

Q. 1 1 amu is equal to

A. 0.666×10^{-27}kg
B. 1.661×10^{28}kg
C. 1.661×10^{27}kg
D. 1.661×10^{-27}kg

Q. 2 How much Volume of O_2 is required for formation of SO_3 from 0.222 moles of SO_2

A. 22.4L
B. 11.2L
C. 2.24L
D. 1.12L

Q. 3 Number of single covalent bonds in water molecule are

A. 1
B. 2
C. 3
D. 4

Q. 4 Ascorbic acid has high percentage of

A. Carbon
B. Hydrogen
C. Oxygen
D. All have same

Q. 5 NH_3 can be called

A. Molecule of atoms
B. Molecule of element
C. Molecule of compound
D. Molecule of ion

Q. 6 Diameter of atom is

A. 0.2nm
B. 0.5nm
C. 0.9nm
D. 0.8nm

Q. 7 No side reaction takes place in

A. Spirometry
B. Stoichiometry
C. Tritimetry
D. Spectrometry

Q. 8 NH_4Cl and $Ca(OH)_2$ are react to form Ammonia What is the mass of ammonia is produce when 100 gram of each is give

A. 31.7g
B. 15g
C. 28g
D. 24g

Q. 9 The mass present in $2dm^3$ of O_2 at STP

A. 1.7
B. 2.35
C. 2.8
D. 3.7

Q. 10 Product of combustion of H_2 is

A. CO_2
B. H_2O
C. H_2O_2
D.CO

Q. 11 Mole of N in 2g of N_2

A. 2
B. 1/14
C. 14
D. 28

Q. 12 Chemical equations do not tell about the _____ because of certain limitations.

A. Rate of reaction
B. Conditions
C. Pressure
D. All of these

Q. 13 An ordinary microscope can measure the size of an object up to or above

A. 25nm
B. 45nm
C. 500nm
D. 6nm

Q. 14 18g of water contains _____ atoms of hydrogen

A. 6.022×10^{23}
B. $3\times6.022\times10^{23}$
C. $2\times6.02\times10^{23}$
D. $4\times6.22\times10^{23}$

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Q. 15 The relative atomic mass of copper is

A. 63.345amu
B. 63.455amu
C. 63.55amu
D. 63.456amu

Q. 16 25 cm^3 of the sample of H_2 gas effuses four times as rapidly as 25 cm^3 of an unknown gas what will be the molar mass of unknown gas?

A. 16g mol^{-1}
B. 32g mol^{-1}
C. 72g mol^{-1}
D. 48g mol^{-1}

Q. 17 The negative ions having group of atoms is/are

A. OH^-
B. CO_3^{-2}
C. $Cr_2O_7^{-2}$
D. All of these

Q. 18 The study of composition of pure substance in 17th century clearly shows that few elements are components of many substances

A. Qualitative
B. Quantitative
C. Both A and B
D. Extensive

Q. 19 The concept of _____ of gases helps to relate solids and liquids in a quantitative manner.

A. Density
B. Molar volume
C. Pressure
D. Temperature

Q. 20 Empirical formula of ascorbic acid

A. $C_3H_4O_3$
B. $C_3H_2O_4$
C. $C_2H_3O_5$
D. $C_3H_6O_3$

Q. 21 NH_3 gas can be prepared by heating together solid NH_4Cl and $Ca(OH)_2$,if a mixture containing 100 g of each solid is heated then calculate mass of ammonia

A. 34.9g
B. 31.7g
C. 38g
D. 35g

Q. 22 In combustion analysis CO_2 is absorbed by

A. 50%KOH
B. $Mg(ClO_4)_2$
C. 100%KOH
D. Anhydrous KOH

ANSWER KEY

1	D	11	B	21	B
2	C	12	D	22	A
3	B	13	C		
4	C	14	C		
5	C	15	C		
6	A	16	B		
7	B	17	D		
8	A	18	B		
9	C	19	B		
10	B	20	A		

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Topic 2

ATOMIC STRUCTURE

PRACTICE EXERCISE

Q.1 According to Bohr, the orbits in which electrons revolve around the nucleus are
A. Oval
B. Elliptical
C. Cylindrical
D. Circular

Q.2 Atomic number of K
A. 19
B. 21
C. 27
D. 11

Q.3 Number of protons, electrons and neutrons in Pb^{+2}
A. 82, 80, 125
B. 80, 82, 125
C. 125, 82, 80
D. 125, 80, 82

Q.4 Spin could be
A. +1/2, −1/2
B. 1/2, +1/2
C. ½,0
D. None

Q.5 Cancer treatment which radiation use
A. Alpha
B. Beta
C. Gamma
D. Cathode rays

Q.6 M-shell contain
A. S
B. s, p, d
C. S, p, d, f
D. s, p

Q.7 Who discovered neutron
A. Chadwick
B. Goldstein
C. Palnck
D. Thomson

Q.8 If electrons are passed in electric and magnetic field then correct equation is
A. Will go straight
B. Will bend towards the positive plate
C. Will bend towards negative plate
D. Will be deflected perpendicular to the axis of magnetic field

Q.9 Total no. of electrons that can be accommodated in f-subshell
A. 6
B. 14
C. 10
D. 18

Q.10 n+ *l* value for 5d is
A. 5
B. 6
C. 7
D. 8

Q.11 Maximum number of electrons in p-subshell are
A. 6
B. 10
C. 12
D. 14

Q.12 Which one has greater mass?
A. Alpha
B. Beta
C. Gamma
D. Proton

Q.13 Number of electrons in 3p subshell of Ca?
A. 4
B. 5
C. 6
D. 2

Q.14 Number of electrons in chloride ion
A. 8
B. 7
C. 9
D. 18

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Q. 15 According to Planck's quantum theory:
A. a body emits energy in quanta
B. a body absorbs energy in quanta
C. emits or absorb radiations discontinuously
D. All of these

Q. 16 Rydberg's constant is related to the atomic no. as:
A. Z^2
B. $1/Z^2$
C. Z_3
D. Z

Q. 17 Magnetic quantum number of s is
A. 0
B. 1
C. 2
D. 3

Q. 18 Planck's constant was named after scientist
A. Heisenberg
B. Planck
C. Henry
D. Bohr

Q. 19 The probability of finding an electron between s-orbitals is zero. This place is called _____ plane
A. Nodal
B. Non nodal
C. Anti-nodal
D. Erect

Q. 20 Positive rays are also known as
A. X rays
B. Gamma rays
C. Canal rays
D. Cathode rays

Q. 21 Each electron in an atom must have its own unique set of quantum number is a statement of _____.
A. Aufbau principle
B. Hand's rule
C. Pauli exclusion principle
D. None of these

Q. 22 During bond formation, d orbitals splits into _____ of orbitals?
A. 3 sets
B. 4 sets
C. 5 sets
D. 2 sets

Q. 23 The e-m values of the positive rays depends on _____ enclosed in a discharge tube
A. Nature of gas
B. Properties of gas
C. Composition of gas
D. All of these

Q. 24 The lobes of d-orbitals lie between the axis
A. First two
B. In all axis
C. First three
D. None of these

Q. 25 Different kind of atoms of same elements are called isotopes heaving different _____ but same _____ property?
A. Physical, atomic
B. Physical, chemical
C. Chemical, Physical
D. Chemical, Atomic

Q. 26 The maximum probability of finding an electron is at distance of
A. 0.53 mm
B. 0.53 nm
C. 0.153nm
D. 1.53mm

Q. 27 Potassium has electronic configuration (2, 8, 8, 1) and become ion by attaining configuration
A. 2, 8, 8, 2
B. 2, 8, 8
C. 2,8,1
D. 2, 8, 8, 8

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Q. 28 **Total number of electrons that can be accommodated in f-subshell**
A. 6
B. 14
C. 10
D. 18

Q. 29 **Number of electrons in 3p orbital of Ca?**
A. 2
B. 4
C. 8
D. 6

Q. 30 **Which has greater energy according to auf-bau principle (n + l)**
A. 5d
B. 4f
C. 7s
D. 6p

Q. 31 **Spectrum is the visual display or _____ of component of while light when it is passed through prism**
A. Rarefaction
B. Radiation
C. Collection
D. Dispersion

Q. 32 **All the three p-orbitals have same energy in the absence of magnetic field and are called _____ orbital's**
A. Generated
B. Delocalized
C. Degenerated
D. Localized

Q. 33 **How do the 'p' orbitals p_x, p_y, p_z differ from each other**
A. Size
B. Shape
C. Orientation
D. Capacity

Q. 34 **Line spectrum of sodium contains _____ colored lines separated by a definite distance**
A. One yellow
B. Two yellow
C. Two brown
D. Two golden

Q. 35 **Isoelectronic species have same**
A. Electronic configuration
B. Ionic size
C. Reactivity
D. PH

Q. 36 **The equation $En = -2.17 \times 10^{-18}\ [1/n^2]$ J gives the energy associated with electron in nth orbit of hydrogen atom. Its negative sign shows that electron is**
A. Away from nucleus
B. Bound by nucleus
C. Closer to nucleus
D. All of these

Q. 37 **Atomic number of potassium**
A. 19
B. 18
C. 20
D. 21

Q. 38 **Balmer series in H spectrum lies in_____ region**
A. Visible
B. Ultravoilet
C. Infrared
D. Far red

Q. 39 **Azimuthal quantum number is represented by**
A. n
B. *l*
C. m
D. s

Q. 40 **Which one has more mass**
A. Electron
B. Proton
C. Neutron
D. α-particle

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Q. 41 If there are 9 proton,9 electron ,9 neutron than atomic mass will be

A. 9
B. 18
C. 26
D. 36

Q. 42 Which rays are used for treatment of cancer

A. Alpha
B. Beta
C. Gamma
D. Cosmic

Q. 43 Penetration power of orbitals

A. s > p > d > f
B. s < p < d < f
C. p > s > d > f
D. f > d > p > f

Q. 44 Azimuthal Quantum number depends on

A. n
B. m
C. s
D. All

Q. 45 How many maximum no. Electrons present in an orbital?

A. 16
B. 6
C. 14
D. 2

Q. 46 Which of the following is correct order of orbital in increasing energy order is

A. s > p > d > f
B. s < p < d < f
C. s > p < d > f
D. s > p > d < f

Q. 47 Positive charged particles in discharge tube move toward

A. Anode
B. Cathode
C. Pt-electrode
D. Graphite anode

ANSWER KEY

1	D	11	A	21	C	31	D	41	B
2	A	12	A	22	D	32	C	42	B
3	A	13	C	23	A	33	C	43	A
4	A	14	D	24	C	34	B	44	A
5	C	15	D	25	B	35	A	45	D
6	B	16	A	26	B	36	B	46	B
7	A	17	A	27	B	37	A	47	B
8	A	18	B	28	B	38	A		
9	B	19	A	29	D	39	B		
10	C	20	C	30	C	40	D		

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Topic 3

GASES

PRACTICE EXERCISE

Q.1 **The unit is _____ commonly used by meteorologist**
A. Bar
B. Centibar
C. Millibar
D. Kilobar

Q.2 **Plasma is difficult to maintain at**
A. Low temperature
B. Low pressure
C. High temperature
D. High pressure

Q.3 **Effusion is the movement of a gas through extremely small opening of molecular size into region of _____ pressure.**
A. High
B. Moderate
C. Low
D. Same

Q.4 **PV/nRT for an ideal gas is called**
A. Expansion factor
B. Depression factor
C. Compressibility factor
D. Diffusion factor

Q.5 **The sum of mole fraction of the gases in a mixture of gases is**
A. Always greater than 1
B. Always smaller than 1
C. May be equal or less than 1
D. Always 1

Q.6 **According to Avogadro's law, .899 g of 1dm^3 H_2 and 1.4384 g of 1 dm^3 O_2 have number of molecules**
A. Same
B. Different
C. H_2 has more
D. O_2 has more

Q.7 **Calculate the mass of 1dm^3 of NH_3 gas at 3°C and 1 mm Hg pressure, considering that NH_3 is ideally behaving**
A. 0.99g
B. 0.89g
C. 0.9kg
D. 0.78g

Q.8 **212 degree Fahrenheit is expressed in Kelvin as:**
A. 373
B. 273
C. 173
D. 0

Q.9 **For non-ideal gas**
A. PV/NRT not equal to 1
B. PV/nRT=1
C. Follow gas Lews
D. Follow general gas equation

Q.10 **R does not depend upon**
A. A nature of gas
B. Pressure
C. Temperature
D. None of these

Q.11 **Which law is applicable while respiration**
A. Dalton's law
B. Avogadro's law
C. Graham's law
D. Boyle's law

Q.12 **Which has highest rate of diffusion**
A. CO_2
B. NH_3 SO_2
C. HCl
D. SO_2

Q.13 **Effusions is**
A. Inversely to mass
B. Direct to mass
C. Square root of mass
D. Inversely to square root of mass

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Q. 14 KMT discovered by
A. Bernoulli
B. Rutherford
C. Bohr
D. Heisenberg

Q. 15 Which of these gasses cannot be Liquify
A. H_2
B. He
C. Both a and b
D. CO_2

Q. 16 General gas equation also know as
A. Ideal
B. Real
C. A and B both
D. None of these

Q. 17 When temperature increases, isotherm moves
A. Away from both axes
B. Toward x axis
C. Toward y axis
D. Remains at same position

Q. 18 Volume in ideal gas is directly related to
A. N, T
B. n, T, P
C. T,P
D. K.E, P

Q. 19 According to kinetic molecular theory absolute temperature is directly proportional to _____ of molecules
A. Translational K.E
B. Vibrational K.E
C. K.E
D. Average translational K.E

Q. 20 Calculate the density of methane in g/L at -45oC and 300 torr pressure?
A. .0.3131
B. 0.233
C. 3.3131
D. 0.338

Q. 21 General gas equation is also known as
A. Vander walls equation
B. Ideal gas equation
C. non ideal gas equation
D. Vant-hoff equation

Q. 22 General gas equation is used for:
A. Non real gases
B. real gases
C. Ideal gases
D. Ideal or non-real

Q. 23 General gas equation
A. PV = MRT
B. PV = nRT
C. P = nRt/V
D. PM = dMT

ANSWER KEY

1	C	11	A	21	B
2	A	12	B	22	C
3	C	13	D	23	B
4	C	14	A		
5	D	15	C		
6	A	16	A		
7	A	17	A		
8	A	18	B		
9	A	19	D		

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Topic 4

LIQUIDS

PRACTICE EXERCISE

Q. 1 The distillation which is carried out under reduced pressure is called as
A. Pressure distillation
B. Reduced distillation
C. Vacuum distillation
D. Low boiling distillation

Q. 2 In which of the following water evaporate earlier
A. Cup
B. Saucepan
C. Glass
D. Small bowl

Q. 3 Conversion of water into steam is a
A. Spontaneous reaction
B. Reversible reaction
C. Exothermic reaction
D. Combustion reaction

Q. 4 On which factors the vapor pressure of a substance does not depend?
A. Physical state of matter
B. Surface area
C. Intermolecular forces
D. Temperature

Q. 5 How many times a covalent bond is stronger than H-bond?
A. 10
B. 20
C. 12
D. 2

Q. 6 The separation of components of liquid on the basis of their boiling points is called as?
A. Destructive distillation
B. Vacuum distillation
C. Fractional distillation
D. Partial distillation

Q. 7 Which instrument is used to measure the vapor pressure of a liquid?
A. Barometer
B. Manometer
C. Thermometer
D. Sphygmometer

Q. 8 Which of the following has highest vapour pressure?
A. Diethyl ether
B. Ethan of
C. Water
D. Ethylene glycol

Q. 9 When heat is provided to a liquid it causes it to _____?
A. Contract
B. Decompose
C. Expand
D. Become non volatile

Q. 10 Which of the following intermolecular forces are present between octane molecules?
A. London dispersion forces
B. Dipole dipole forces
C. Debye forces
D. H-bonding

Q. 11 Which of the following forces has ability to form clusters and large molecules?
A. Ionic bond
B. Induced dipole forces
C. H-bond
D. All of these

Q. 12 At 0°C, what is the physical state of water?
A. ice
B. Liquid
C. Vapour
D. Both ice and liquid

Q. 13 Steam causes more server burns than boiling water because it has
A. Latent heat of fusion
B. Latent heat of vaporization
C. Latent heat of sublimation
D. All of above

Q. 14 Hydrogen bonding is involved in
A. Cleansing action of soap
B. Biological molecule
C. Solubility
D. All of those

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Q. 15 In vacuum distillation the boiling point of glycerin is reduced to _____?
A. 290°C
B. 110°C
C. 156°C
D. 210°C

Q. 16 H-bonding is stronger than _____?
A. Dipole dipole forces
B. Debye forces
C. London forces
D. All of these

Q. 17 While calculating vapor pressure of a liquids in manometer, the column of mercury facing the vapors of a liquids is _____ due to pressure on surface of liquids in flask
A. Compressed
B. Depressed
C. Rises
D. Lowers

Q. 18 The measurement of the extent to which electron cloud is distorted is termed as
A. Polarizability
B. Molecularity
C. Induction
D. Dispersion

Q. 19 Molecules of liquids are in constant state of motion, it causes
A. Diffusion
B. Evaporation
C. Melting
D. Both A and B

Q. 20 In the formation of HF, _____ donates the major of its electron among hydrogen atom or fluorine atom
A. H-atom
B. F-atom
C. Both A and B
D. None of these

Q. 21 The temperature at which vapor pressure of a liquid becomes equal to external pressure or atmospheric pressure is called as?
A. Melting point
B. Freezing point
C. Boiling point
D. Sublimation point

Q. 22 HF has high boiling point than HCl is
A. Dipole dipole forces
B. LDF
C. Hydrogen bonding
D. Debye forces

Q. 23 The molecules of _____ have dipole-dipole interaction
A. Methane
B. Neon
C. Ammonia
D. Ethane –ethyl alcohol

ANSWER KEY

1	C	11	C	21	C
2	B	12	D	22	C
3	A	13	B	23	C
4	B	14	D		
5	B	15	D		
6	C	16	D		
7	B	17	B		
8	A	18	A		
9	C	19	D		
10	A	20	A		

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Topic 5

SOLIDS

PRACTICE EXERCISE

Q. 1 Which of the following is an isomorph of copper?
A. Zn
B. Cd
C. Ag
D. Mn

Q. 2 Highest vapor pressure
A. Molecular solids
B. Ionic solids
C. Covalent solids
D. Metallic solid

Q. 3 The molecular theory for metallic Solids is
A. Electron gas theory
B. VSEPR theory
C. Crystal field theory
D. Kinetic molecular theory

Q. 4 Position of particles in crystalline solids represented by
A. Crystal lattice
B. Unit cell
C. Lattice point
D. Bravais lattice

Q. 5 Shape of iodine unit cells.
A. Orthorhombic
B. Hexagonal
C. Tetragonal
D. Cubic

Q. 6 Radius ratio has units
A. Joule
B. Nano meter
C. Unitless
D. Angstrom

Q. 7 $CuSO_4.5H_2O$ is an example of crystal system
A. Triclinic
B. Cubic
C. Tetragonal
D. Rhombohedral

Q. 8 Which of the following solids is isotropic?
A. Ionic solids
B. Molecular solids
C. Amorphous solids
D. Metallic solids

Q. 9 Properties due to change of direction are called__
A. Isotropic properties
B. Anisotropy
C. Symmetry
D. Cleavage plane

Q. 10 Which of the following has transition temperature equal to 128 degree celsius?
A. KNO_3
B. Sulphur
C. Tin
D. Na_2CO_3

Q. 11 Polymorphs have different:
A. chemical properties
B. Bonding of anion
C. Structure of anion
D. Physical properties

Q. 12 Allotropy is for
A. Elements
B. Compound
C. Molecules
D. Formula units

Q. 13 HF has higher boiling point than HCl due to hydrogen bonding
A. DDF
B. DIDF
C. L.D.F
D. H. Bonding

Q. 14 Isomorphism is shown by
A. Ionic solid
B. Metallic solid
C. Coinage metal
D. All of there

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Topic-5

Q. 15 Current in electrolysis is carried through
A. Free electrons
B. Positive ions
C. Negative ions
D. Both B and C

Q. 16 The most symmetrical crystal system
A. Triclinic
B. Tetragonal
C. Cubic
D. Rhombohedral

Q. 17 Which one the characteristic of ionic solids?
A. High vapor pressure
B. Good conductivity
C. Low melting point
D. Solubility in polar solvents

Q. 18 The size and shape of crystal depends upon some crystallographic elements which are
A. 3
B. 4
C. 6
D. 8

Q. 19 The deliquescence is a property in which a solid
A. Absorbs moisture and remains solid
B. Absorbs moisture and turns to liquid form
C. Loses water of crystallization
D. Increases the number of water of crystallization

Q. 20 Which one of them is known as super cooled liquids?
A. Glass
B. Silica
C. Diamond
D. Carbon

Q. 21 To conduct electricity through ionic solid, ions should be
A. Excited
B. Energized
C. Free
D. In random motion

Q. 22 The smallest part of the crystal lattice has all the properties of the entire crystals this is called
A. Unit
B. Unit cell
C. Unit crystal
D. All of these

Q. 23 Lattice points are also called
A. Space lattice
B. Crystal lattice
C. Lattice sites
D. Lattice location

Q. 24 Definite shape of NaCl crystal is its
A. Characteristics
B. Habit
C. Symmetry
D. All of these

Q. 25 Which of the following are isomorphs
A. $NaNO_3$, KNO_3
B. NaCl, KNO_3
C. NaCl, Mg
D. KCl, $NaNO_3$

Q. 26 Symmetry is repetition of _____ when a crystal rotates at 360° along its axis
A. Faces
B. Angles
C. Edge
D. All of these

Q. 27 Which of the following is directional bond?
A. Ionic bond
B. H-bond
C. Metallic bond
D. None of these

Q. 28 Thermal conductivity of graphite is greater when mobile electron is moving to its layers
A. Perpendicular
B. Right angle
C. Parallel
D. All of these

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Q. 29 Which of the following is true regarding polymorphism
A. Same chemical properties
B. Different chemical properties
C. Same physical properties
D. All of above

Q. 30 Types of solids on basis of bonds present in them
A. 2
B. 3
C. 4
D. 5

Q. 31 Ionic solids are
A. Soft
B. soluble in benzene
C. Good conduct or of electricity
D. Brittle

Q. 32 Coordination number of Na in NaCl
A. 4
B. 5
C. 6
D. 8

Q. 33 $NaNO_3$ as unit cell
A. Triclinic
B. Trigonal
C. Rhombohedral
D. Tetragonal

Q. 34 2 sides of unit cell and 3 angles are equal in
A. Cubic
B. Tetragonal
C. Monoclinic
D. Orthorhombic

Q. 35 Molecular solids are
A. Bad conductors of electricity
B. Have high melting and boiling point
C. Non-volatile
D. Non-compressible

Q. 36 Lattice energy of NaCl ___
A. –787 kJ/mol
B. –980 kJ/mol
C. 895 kJ/mol
D. –728kJ/mol

Q. 37 Metallic solids are
A. Good conductor
B. Bad conductor
C. None
D. Can-not be predicted

Q. 38 Which is true about copper
A. Low melting points
B. Can be easily bent
C. Poor conductor
D. Highly reactive

Q. 39 Lattice energy decrease when:
A. Charge to size ratio increases
B. Charge to size ratio decrease
C. Charge increases
D. Size decreases

ANSWER KEY

1	C	11	D	21	C	31	D
2	A	12	A	22	B	32	C
3	A	13	D	23	C	33	C
4	C	14	D	24	B	34	B
5	D	15	D	25	A	35	A
6	C	16	C	26	D	36	A
7	A	17	D	27	B	37	A
8	C	18	C	28	C	38	B
9	B	19	B	29	A	39	B
10	D	20	A	30	C		

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Topic 6

CHEMICAL EQUILIBRIUM

PRACTICE EXERCISE

Q. 1 The conversion of nitrogen to ammonia or nitrogenous compounds is called

A. Nitrification
B. Nitrogen Fixation
C. Denitrification
D. Assimilation

Q. 2 Reversible reaction is

A. spontaneous
B. non spontaneous
C. Intermediate b/w spontaneous and non-spontaneous
D. Ether spontaneous or non-spontaneous

Q. 3 $H_2 + I_2 \rightleftharpoons 2HI$ relation between Kp and Kc for this reaction is

A. Kp = Kc/RT
B. Kp=Kc
C. Kc = Kp/RT
D. $Kp = Kc(RT)^{-1}$

Q. 4 Production of ammonia by Haber process is made economical by using

A. Law of Mass action
B. Catalyst
C. Le Chatelier's principle
D. All of these

Q. 5 With different number of moles of reactants and product the volume of system

A. Remains unchanged
B. Changes
C. Decreases
D. Increases

Q. 6 Kc and Kp have the same value when reactants and products have same number of

A. Atoms
B. Ions
C. Molecules
D. Moles

Q. 7 Reversible reactions are?

A. Spontaneous
B. Non-Spontaneous
C. Both
D. None

Q. 8 Production of ammonia by Haber process is made economical by using

A. Law of mass action
B. Le Chatelier's principle
C. Catalyst
D. All of these

Q. 9 According to Le Chatelier's principle exothermic reactions are favored by

A. Increase in pressure
B. Increase in volume
C. Decrease in temperature
D. All of these

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Q. 10 $Kp = Kc\,(RT)^{\Delta n}$, T stands for

A. Temperature
B. Absolute temperature
C. Critical temperature
D. All of these

Q. 11 Manufacturing of Ammonia by Haber's process is an

A. Endothermic reaction
B. Irreversible
C. Exothermic reaction
D. Slow

Q. 12 Equilibrium constant for ideal gases in terms of partial pressure in denoted by

A. Kc
B. K
C. Kp
D. None of these

Q. 13 Classification of solids is based upon the arrangement of

A. Molecules
B. Atoms
C. Ions
D. All of these

Q. 14 A very small value of Kc depicts

A. No reaction
B. Backward reaction
C. Little forward reaction
D. Complete reaction

Q. 15 The equilibrium constant is always written as a ratio of

A. Reactants over products
B. Product over reactants
C. Product times reactants
D. None of these

ANSWER KEY

1	B	11	C
2	B	12	C
3	B	13	D
4	C	14	C
5	B	15	B
6	D		
7	B		
8	B		
9	C		
10	B		

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Topic 7 REACTION KINETICS

PRACTICE EXERCISE

Q. 1 Activated complex is formed due to

A. Pressure
B. Temperature
C. Effective collision
D. Ineffective collision

Q. 2 The chemical reactivities of elements depend upon their characteristics electronic _____.

A. Shields
B. Forces
C. Configurations
D. Shells

Q. 3 Activated complex has

A. High potential energy
B. High K.E
C. Low P.E
D. All

Q. 4 Catalyst can

A. Increase rate of reaction
B. Increase conc of reactant
C. Increase conc of product
D. Decrease rate of reaction

Q. 5 Rate of reaction in gases is best describe as

A. $\Delta c/\Delta t$
B. $\Delta p/\Delta t$
C. $\Delta t/\Delta x$
D. All

Q. 6 Energy required to start a reaction is called.....

A. Ionization energy
B. Activation energy
C. Bond energy
D. Lattice energy

Q. 7 The number of reacting molecules which changes their concentration chemical change is called

A. Extent of a reaction
B. Order of a reaction
C. Specific rate of a reaction
D. Enthalpy of reaction

Q. 8 Drawing a graph between concentration change with time gives a

A. Straight line
B. Parabola
C. Curve
D. Scattered graph

Q. 9 Rate = $k[NO_2]$, the order of this reaction is

A. Zero
B. Three
C. Two
D. One

Q. 10 With the passage of time rate of reaction always

A. Increases
B. Remains constant
C. Decreases
D. Increases exponentially

Q. 11 Hydrolysis of tertiary butyl bromide is

A. Pseudo 1st order
B. 2nd order
C. Zero order
D. Negative order

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Q. 12 If a graph is plotted with concentration data of a reactant in a chemical reaction the curve is

A. Rising
B. Falling
C. U shaped
D. None of these

Q. 13 Spectrum is the visual display or _____ of component of while light when it is passed through prism

A. Rarefaction
B. Radiation
C. Collection
D. Dispersion

Q. 14 After one half life, the mass of the substance becomes:

A. Half
B. Double
C. Remain same
D. Increases 4 times

Q. 15 Activated state is

A. Most stable
B. Least stable
C. Most energetic
D. Both B and C

Q. 16 In spectrometry, spectrometer can analyze

A. Atom
B. Ions
C. Molecules
D. All of these

Q. 17 The change in volume depends on:

A. Initial state reaction
B. Final state
C. Initial and final states
D. Path of reaction

Q. 18 When rate of reaction is measured by the amount of radiation absorbed, it is called

A. Optical rotation method
B. Electrical conductivity method
C. Refractometry method
D. Spectrometry

Q. 19 If the time interval is very small for determining the rate of a reaction the values of average and instantaneous rate

A. Are both zero
B. Very close to each other
C. Differs by a large number
D. Are negative

Q. 20 As reaction starts instantaneous rate is

A. Higher than average rate
B. Lower than average rate
C. Equal to average rate
D. None of these

Q. 21 Activated complex in a reaction Has

A. K.E max
B. PE max
C. P.E min
D. a and c

Q. 22 When the colliding Molecules comes Closer to each Other It____ to go to Transition

A. Complex
B. collide fast
C. Slows Down
D. does not depend Upon The energy

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Q. 23 Half-life period for a first order reaction is independent of

A. Conditions of temperature
B. Initial concentration of the compound
C. Presence of catalyst
D. All of these

Q. 24 Reaction which are completed in steps must contain

A. Rate determining step
B. Slowest step
C. Fastest step
D. Both A and B

ANSWER KEY

1	C	11	A	21	B
2	C	12	B	22	C
3	A	13	D	23	B
4	A	14	A	24	D
5	B	15	D		
6	B	16	A		
7	B	17	C		
8	C	18	D		
9	D	19	B		
10	C	20	A		

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Topic 8 THERMOCHEMISTRY AND ENERGETICS OF CHEMICAL REACTIONS

PRACTICE EXERCISE

Q. 1 Hess's law is known as
A. Law of heat summation
B. Law of constant heat capacity
C. Law of mass action
D. Law of conservation of mass

Q. 2 Relation between qp and qv
A. $q_p < q_v$
B. $q_p > q_v$
C. $q_p = q_v$
D. $q_p \leq q_v$

Q. 3 Formation of SO_3 form SO_2 is ____Reaction:
A. Endothermic
B. Exothermic
C. Both
D. None

Q. 4 For strong and acid strong base neutralisation energy
A. Constant
B. Variable
C. Depends on nature of acid
D. None

Q. 5 Unit of energy
A. Joule
B. Kilojoule
C. Calorie
D. All

Q. 6 Unavailability of methods to find out heat of reactions accurately makes thermochemistry
A. Widely applicable in science
B. A limited field of study
C. A useful aspect of industrial research
D. None of these

Q. 7 Which one of the following is not and example of state function?
A. Temperature(T)
B. Enthalpy(E)
C. Volume(V)
D. Heat(q)

Q. 8 Temperature and volume in an experiment are part of
A. Surroundings
B. System
C. State of a system
D. All of these

Q. 9 In endothermic reaction heat is absorbed from
A. System
B. Surrounding
C. Both
D. None of these

Q. 10 ΔH for exothermic reaction is _____?
A. More than 1
B. Positive
C. Negative
D. Neutral

Q. 11 Which of the following condition is constant in bomb calorimeter?
A. Pressure
B. Volume
C. Temperature
D. All of these

Q. 12 Heat exchanged between the system and surrounding at constant volume is shown by the relation
A. $\Delta H = qv + w$
B. $\Delta E = (q)v$
C. $\Delta H = (q)v$
D. $\Delta E = (qv) + PV$

Q. 13 At constant volume the heat supplied is equal to
A. Work done
B. Internal energy change
C. Enthalpy
D. Entropy

Q. 14 Work done on the system is
A. Negative
B. Depends upon Boundary conditions
C. Positive
D. Zero

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Q. 15 Which one is not a state function?
A. Internal energy
B. Enthalpy
C. Work
D. None of these

Q. 16 Heat supplied at constant pressure equals to
A. Activation energy
B. Internal energy change
C. Entropy
D. Enthalpy

Q. 17 Enthalpy is the sum of internal energy and
A. Work done
B. Entropy
C. Potential energy
D. Kinetic energy

Q. 18 Heat of a solution for the substance whose solubility decrease with increase in temperature is
A. Positive
B. Zero
C. High
D. Negative

Q. 19 Enthalpy change of solution of Na_2CO_3 is a _____ reaction?
A. Exothermic reaction
B. Endothermic reaction
C. Spontaneous reaction
D. Nonspontaneous reaction

Q. 20 An enthalpy cycle used to calculate the lattice energy is
A. Hess law
B. Carnot cycle
C. Born Haber cycle
D. Haber's process

Q. 21 Energy for the endothermic reaction is given a _____ value
A. Positive
B. Negative
C. 0
D. Neither positive nor negative

Q. 22 Which is correct for 1st law of thermodynamics?
A. $\Delta E = q + W$
B. $\lambda = h/mv$
C. $E = mC^2$
D. $P_1V_1 = P_2V_2$

Q. 23 Energy of products is greater in
A. Exo
B. Endo
C. Spontaneous
D. Neutralization

Q. 24 Amount of heat absorbed by 2kg water when temperature changes by 10°C is
A. 4180J
B. 8300J
C. 8000J
D. 8400

Q. 25 When a bond formed, energy is
A. Absorbed
B. Released
C. Constant
D. None

Q. 26 Which one is state function
A. Work
B. Heat
C. Pressure
D. None

Q. 27 What is the value of One calorie in joule?
A. 4.98J
B. 8.21J
C. 7.98J
D. 4.18J

Q. 28 Formation of carbon dioxide hinders in calculating the heat of formation of
A. CCl_4
B. O_3
C. CO
D. C

Q. 29 Decomposition of water into hydrogen and oxygen is a
A. Reversible reaction
B. Endothermic reaction
C. Exothermic reaction
D. Oxidation reaction

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Q. 30 Heat of formation of CO

A. -110kJ/mol
B. -283kJ/mol
C. -393kJ/mol
D. –193kJ/mol

Q. 31 When 40J heat is provided and 20J work is done, if intial internal energy is 10J then final internal energy is

A. 30J
B. 20J
C. 10J
D. 50J

Q. 32 In glass calorimeter, which is constant

A. Pressure
B. Volume
C. Temperature
D. None

ANSWER KEY

1	A	11	B	21	A	31	A
2	B	12	B	22	A	32	A
3	A	13	B	23	B		
4	A	14	C	24	D		
5	D	15	C	25	B		
6	B	16	D	26	C		
7	D	17	A	27	D		
8	C	18	D	28	C		
9	B	19	A	29	B		
10	C	20	C	30	A		

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Topic 9 ELECTROCHEMISTRY

PRACTICE EXERCISE

Q. 1 In oxidation number method, the final step to balance equation is
A. Hit and Trial method
B. Inspection method
C. Identifying the reducing participants
D. Identifying the oxidized participants

Q. 2 Pure metal
A. Corrode slowly
B. Corrode rapidly
C. Does not corrode easily
D. None of these

Q. 3 H_2 and O_2 reacts in presence of
A. Pt
B. Pd
C. Ni
D. all

Q. 4 For a galvanic cell consisting of Zn and Fe dipped in their respective solutions
A. Zn act as anode
B. Zn act as cathode
C. Fe act as anode
D. None

Q. 5 The least reactive transition metal
A. Zn
B. Sc
C. Cu
D. Au

Q. 6 Elements like F_2, Cl_2 lies
A. Above in ECS
B. Below in ECS
C. Mid of ECS
D. None

Q. 7 Strongest reducing agent
A. I^-
B. F^-
C. Cl^-
D. Br^-

Q. 8 Fl_2, Cl_2, Br_2 present in
A. Above in series
B. Above hydrogen
C. Below in series
D. None

Q. 9 Which of the following is strong reducing agent
A. Li
B. F
C. Na
D. Mg

Q. 10 In galvanic cell salt bridge
A. Aqueous solution of KCl in a gel
B. Solution of $CaCl_2$ in a gel
C. Solution of $MgCl_2$ in a gel
D. Any of above can be used

Q. 11 Efficiency of fuel cell
A. 70%
B. 75%
C. 68%
D. 20%

Q. 12 Metals are _____?
A. Reducing agents
B. Oxidizing agents
C. Both A and B
D. Dehydrating agents

Q. 13 Electrolysis of a dilute solution of NaCl results at the anode
A. Sodium
B. Chlorine
C. Hydrogen
D. Oxygen

Q. 14 Each half reaction in ion electron method is balanced by adding
A. Electrons on left hand side
B. Electron on right hand side
C. Both left or right hand side
D. None of these

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Q. 15 In metal hydrides the oxidation number of hydrogen is
A. 1
B. -1
C. 0
D. 2

Q. 16 Formation of $ZnSO_4$ from blue copper sulphate solution is a spontaneous
A. Oxidation reaction
B. Reduction reaction
C. Addition reaction
D. Redox reaction

Q. 17 Electrolysis is a
A. Spontaneous reactions
B. Reduction reaction
C. Oxidation-reduction reactions
D. Oxidation reaction

Q. 18 In balancing redox equation the first thing is to
A. Balance out all the reactants
B. Write the skeleton equation
C. Calculate the oxidation number
D. Identify the elements

Q. 19 In electrochemical series reduction potential relates to only
A. Real conditions
B. Standard Condition
C. Positive values
D. Negative values

Q. 20 In ion electron method, while balancing oxygen and Hydrogen atoms
A. First balance hydrogen
B. First balance oxygen
C. Balance both at the same time
D. Order doesn't matter

Q. 21 Sulphate ion is
A. Triangular planner
B. Cubic
C. Cubic face centered
D. Tetrahedral

Q. 22 Conversion of electrical energy into chemical energy is
A. Mechanical energy
B. Electromechanical energy
C. Electrochemistry
D. Chemical energy

Q. 23 In Al_2S_3, the valency of Al is
A. 2
B. 3
C. -3
D. -2

Q. 24 Which of the following is feasible reaction
A. $Pb + SnO \longrightarrow PbO + Sn$
B. $Pb + Zn \longrightarrow PbO + Zn$
C. $Zn + HCl \longrightarrow ZnCl_2 + H_2$
D. $Ag + 2HCl \longrightarrow AgCl_2 + H_2$

Q. 25 The element present at bottom of electrochemical series act as
A. Anode
B. Cathode
C. Oxidizing agent
D. Both B and C

ANSWER KEY

1	B	11	B	21	D
2	C	12	A	22	C
3	A	13	D	23	B
4	A	14	C	24	C
5	D	15	B	25	D
6	B	16	D		
7	A	17	B		
8	C	18	B		
9	A	19	B		
10	A	20	B		

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Topic 10 CHEMICAL BONDING

PRACTICE EXERCISE

Q. 1 All elements get their stabilization to attain nearest configuration
A. Alkali metals
B. Noble metals
C. Alkaloids
D. Noble gases

Q. 2 The difference in the E.N values of the bonded atoms between two atoms is an index to _____ of covalent bond
A. Polar nature
B. Non-polar nature
C. Strength
D. Nature

Q. 3 P character in sp
A. 75%
B. 50%
C. 25%
D. 33%

Q. 4 Which bonds are present in molecule of H_2 according to VBT
A. Pi bond
B. Sigma bond
C. Electrovalent bond
D. Double bond

Q. 5 Due to ionic character bond length
A. Decreases
B. Increases
C. Constant
D. None

Q. 6 Which of the following bond has more energy
A. Covalent
B. Polar covalent
C. Non-polar covalent
D. Ionic

Q. 7 VBT proposed by?
A. Maxwell
B. Drudge
C. Lorenz
D. L-pauling

Q. 8 Hybridization in ethyne
A. sp-sp
B. sp^2-sp
C. sp^2-sp^2
D. sp^3–sp^3

Q. 9 The geometry of AB_3 type molecule is
A. Trigonal pyramidal
B. Trigonal planar
C. Trigonal bipyramidal
D. Tetragonal

Q. 10 Number of unpaired electrons in CO^{+2}
A. 2
B. 3
C. 4
D. 7

Q. 11 Bond order of O_2^{-2}
A. 0
B. 1
C. 2
D. 3

Q. 12 The ionic radius is always _____ than the atomic radius from which it is derived
A. Higher
B. Larger
C. Moderate
D. Smaller

Q. 13 The valence electron pairs are arranged around the central atom to remain at maximum distance apart to keep repulsion
A. Maximum
B. Moderate
C. Zero
D. Minimum

Q.14 Geometry of $AlCl_3$
A. AB
B. AB_2
C. AB_3
D. None

Q.15 Which one is more electronegative
A. F
B. Cs
C. O
D. N

Q.16 All are AB_2 type except
A. $BeCl_2$
B. $HgCl_2$
C. SO_3
D. $MgCl_2$

Q.17 Ionization energy is inversely proportional to
A. Nuclear charge
B. Shielding effect
C. Atomic size
D. Both B and C

Q.18 Hybridization of carbon in carbonyl group is
A. sp
B. Sp^2
C. sp^3
D. dsp^3

Q.19 Ionization energy depends on which of the following factors?
A. Size of atoms
B. Nuclear charge
C. Number of shells
D. All of these

Q.20 Angle in ammonia
A. 92
B. 109.5°
C. 180°
D. 107.5°

Q.21 Bond length in alkyne
A. 1.39A°
B. 1.54A°
C. 1.20A°
D. 1.34°

Q.22 Shape of H_2S
A. Angular
B. Tetrahedral
C. Octahedral
D. Trigonal plannar

Q.23 He follows
A. Duplet rule
B. Octet rule
C. Both
D. None of these

Q.24 Extended octet rule
A. Oxonium ion
B. H3O+
C. PCl_5
D. NH^+_4

Q.25 The second Ionization Energy is maximum for:
A. Li
B. Be
C. B
D. C

Q.26 Valence shell electron pair repulsion theory is given as
A. VESPER
B. VSEPR
C. VSER
D. All

Q.27 $SnCl_2$ is an example of
A. AB
B. AB_2
C. AB_3
D. AB_4

Q.28 Which of the following has least bond energy
A. F_2
B. Cl_2
C. Br_2
D. I_2

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Q. 29 VSEPR explains the
A. Shapes of molecules
B. Bond energy
C. Nature of bond
D. Paramagnetic nature of molecule

Q. 30 Bond angle in water
A. 109.5 degree
B. 120 degree
C. 107.5 degree
D. 104.5 degree

Q. 31 The ionization energy increases from left to right in a period due to increase in
A. Nuclear charge
B. Number of electrons
C. Atomic number
D. All of these

Q. 32 Which of the following represent spin of two electrons in orbital
A. 1/2 ,1/2
B. -1/2, +1/2
C. -1/2, -1/2
D. 1-2, 1+2

Q. 33 The forces present within a molecule are called as _____?
A. Intermolecular forces
B. Van Der Waal forces
C. Chemical bonds
D. Weak forces

Q. 34 The molecules like CH_4, CCl_4 or SiH_4 show attitude of non-polarity due to
A. Structure
B. Symmetry of structure
C. Nature of structure
D. Charges on structure

Q. 35 The electron affinity and atomic radius are _____ to each other
A. Directly proportional
B. Inversely proportional
C. No effect
D. Remains constant

Q. 36 If a molecule contains 4 electron pairs, The shape of molecule will be
A. Tetrahedral
B. Trigonal
C. Linear
D. None of these

Q. 37 The unit of electron affinity is
A. J/mol
B. KJ/atom
C. KJ/mol
D. J/atom

ANSWER KEY

1	D	11	B	21	C	31	D
2	A	12	D	22	A	32	B
3	B	13	D	23	A	33	C
4	B	14	C	24	C	34	B
5	A	15	A	25	A	35	B
6	D	16	C	26	B	36	A
7	D	17	D	27	C	37	C
8	A	18	B	28	D		
9	B	19	D	29	A		
10	B	20	D	30	D		

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Topic 11 s AND p BLOCK ELEMENTS

PRACTICE EXERCISE

Q.1 **Addition of second electron to a uni-negative ion always_____?**

A. An endothermic process
B. An exothermic process
C. Neutral process
D. Energy wasted

Q.2 **Calcium and magnesium react with _____ to form hydrogen gas**

A. Dilute nitric acid
B. Nitrogen dioxide
C. Nitric oxide
D. Nitrous

Q.3 **Shells in calcium are**

A. 2
B. 3
C. 4
D. 5

Q.4 **In M shell, which subshells are present**

A. S
B. S, p
C. S, p, d
D. S, p, d, f

Q.5 **When Al is burnt in air flame produced will be**

A. Blue
B. Violet
C. White
D. None

Q.6 **Choose the most basic oxide**

A. SnO_2
B. MgO
C. Na_2O
D. SiO_2

Q.7 **Gypsum is applied to the soil as a source of**

A. Ca and P
B. Ca and S
C. S and P
D. We could not apply

Q.8 **The _____ study of composition of pure substance in 17th century clearly shows that few elements are components of many substances**

A. Qualitative
B. Quantitative
C. Both A and B
D. Extensive

Q.9 **In periodic table, the period number tells the**

A. Number of shell
B. Electronic configuration
C. Metallic character
D. Photon

Q.10 **The ionic radius of an ion is the radius of the ion while considering it to be _____ in sample**

A. Oval
B. Rectangular
C. Round
D. Spherical

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Q. 11 Sodium is not observed in +2 oxidation state because of its

A. High first ionization potential
B. High second ionization potential
C. High ionic radius
D. High electronegativity

Q. 12 Electron affinity of an atom is the energy released when an electron _____ to an empty or partially filled orbital of an atom to form _____.

A. Removed, cation
B. Added, anion
C. Added, cation
D. Removed, anion

Q. 13 By increasing which of the following factor polarizability increases?

A. Atomic radius
B. Ionization energy
C. Ionic radius
D. Hydration energy

Q. 14 Which of the following family is linked with plant ashes?

A. Nitrogen family
B. Alkali metals
C. Rare earth metals
D. Oxygen family

Q. 15 Which ion will have a maximum value of the heat of hydration?

A. Al^{+3}
B. Cs^{+}
C. Ba^{+}
D. Mg^{+2}

Q. 16 Covalent character of hydrides decrease _____?

A. Down the group
B. Along period
C. Along d-block
D. All of these

Q. 17 Which one is an index to metallic character?

A. Ionization energy
B. Atomic radius
C. Electron affinity
D. Electronegativity

Q. 18 Which one of the following carbonate is water-insoluble?

A. Na_2CO_3
B. K_2CO_3
C. $(NH_4)_2CO_3$
D. $CaCO_3$

Q. 19 Due to the formation of protective layer of oxides at aluminum oxide surface, it is hard to burn it

A. Completely in air
B. Completely in oxygen
C. With carbon
D. With nitrogen

Q. 20 Crystals of $Na_2CO_3.10\ H_2O$ when exposed

A. Lose water and remain solid
B. Gain water and remain solid
C. Gain water and become liquid
D. Remains unchanged

Q. 21 Ionization energies of atoms depends upon the factors

A. Atomic radius of atoms
B. Nature of orbital
C. Shielding effect of inner electrons
D. All of these

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Q. 22 Alkali means

A. Base
B. Salt
C. Both
D. Ash

Q. 23 As far as nuclear charge increases, the decrease in ionic radii will also

A. Large
B. Smaller
C. Remains same
D. Moderate

Q. 24 Which of the following element has highest electronegativity?

A. Fluorine
B. Magnesium
C. Sodium
D. Bromine

Q. 25 The most common positive ions are formed by the atoms

A. Non metals
B. Metals
C. Noble gases
D. Hydrogen

Q. 26 The shielding effect is also called

A. Zee effect
B. Screening effect
C. Negative effect
D. Reducing effect

Q. 27 Size of molecule depends on

A. No. of atoms
B. Shape of atoms
C. Nature of atom
D. All of these

ANSWER KEY

1	A	11	B	21	D
2	A	12	C	22	D
3	C	13	A	23	A
4	C	14	B	24	A
5	C	15	A	25	B
6	C	16	A	26	B
7	B	17	A	27	D
8	B	18	D		
9	A	19	B		
10	D	20	A		

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Topic 12 TRANSITION ELEMENTS

PRACTICE EXERCISE

Q. 1 Which one of the following has more unpaired electrons?
A. Mn
B. Cr
C. Cu
D. Zn

Q. 2 The total number of transition elements are?
A. 48
B. 58
C. 32
D. 28

Q. 3 Paramagnetic behaviour of transition elements is due to presence of _____?
A. s electrons
B. Unpaired electrons
C. Paired electrons
D. Outer d electrons

Q. 4 f-Block elements are called
A. Inner transition
B. Outer transition
C. Both
D. None

Q. 5 Hardness of transition metals is due to _____?
A. More melting point
B. More electrons
C. Variable oxidation state
D. Higher binding energies

Q. 6 Melting and boiling point of transition elements is higher due to _____?
A. Higher binding energies
B. Strong metallic bonding
C. Hardness
D. All of these

Q. 7 Colour of Sc^{+3} is
A. Red
B. Green
C. Purple
D. No color

Q. 8 Oxidation number of central metal is represented in
A. Roman
B. Greek
C. English
D. French

Q. 9 Coinage metals belong to
A. IB
B. IIB
C. IIIb
D. IVB

Q. 10 Which transition metal is mostly used in industry.
A. Na
B. Mg
C. Fe
D. C

Q. 11 The maximum oxidation state gained by Mn is
A. 6
B. -7
C. 7
D. 5

Q. 12 When iron got rusted on sea then surface contain
A. Iron sulphide
B. Iron oxides
C. Iron nitride
D. Iron chloride

Q. 13 Oxalato form a _____atom ring
A. 4
B. 5
C. 6
D. 16

Q. 14 The oxidation number of transition element when d orbital is involved in bonding
A. 2
B. 3
C. 4
D. Both B and C

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Q. 15 All transition elements show oxidation state
A. 1
B. 7
C. 2
D. 6

Q. 16 $[PtCl(NO)_2(NH_3)_4]$,nature of ligands
A. 1
B. 2
C. 3
D. 4

Q. 17 The series of transition elements after lanthanum is known as
A. Inner transition
B. Lanthanides
C. Actinides
D. Outer transition elements

Q. 18 f-block elements are present in of the periodic table
A. Between s and p block
B. Bottom of the periodic table
C. Left of the periodic table
D. Right of the periodic table

Q. 19 Which oxidation state give evidence of d orbitals
A. +2
B. +3
C. +4
D. All

Q. 20 Metal along with ligands form
A. Coordination number
B. Coordination sphere
C. Coordination compound
D. Coordination number

Q. 21 $[PtCl(H_2O)_3(NH_3)_3]$has structure
A. Octahedral
B. Tetrahedral
C. Trigonal pyramidal
D. Linear

Q. 22 The elements having partially filled d and f orbitals are called as _____?
A. Transition elements
B. d-block elements
C. f-block elements
D. All of these

Q. 23 d Block elements are also called as _____?
A. Rare earth elements
B. Outer transitions elements
C. Inner transition elements
D. Typical transition elements

Q. 24 Which one of the following is an example of transition element?
A. Na
B. Ba
C. Co
D. Ra

Q. 25 The colour of $[Ti(H_2O)_6]^{3+}$ is
A. Colourless
B. Violet
C. Blue
D. None

Q. 26 In transition element after lanthanum what start next
A. lanthanides
B. -Trans lanthan
C. Tran uranium
D. Actinides

Q. 27 Number of electrons in outermost shell of Scandium
A. 5
B. 3
C. 2
D. 6

Q. 28 Transition elements show colour because of
A. Energy
B. Structure
C. d-d transition
D. All of these

Q. 29 Transition metal have
A. Low binding
B. High binding energy
C. Moderate
D. Can't predict

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Q. 30 Transition metals forms alloys due to
A. Large size
B. Complex formation
C. d-d transition
D. None of these

Q. 31 Types of ligand in $[PtCl(NO_2)(NH_3)]$
A. 1
B. 2
C. 3
D. 4

Q. 32 With impurities like P and S, the open hearth furnace is lined with
A. SiO_2
B. Fe_2O_3
C. FeO
D. CaO, MgO

Q. 33 The transition elements belong to group VIB are
A. Zn, Cd, Hg
B. Fe, Ru, Os
C. Mn, Tc, Re
D. Cr, Mo, W

Q. 34 Important transition element is
A. C
B. Mg
C. Fe
D. Li

Q. 35 Color emitted by $[Ti(H_2O)_6]^{+3}$
A. Yellow
B. Violet
C. Red
D. Green

Q. 36 The most important transition metal is:
A. Carbon
B. magnesium
C. Na
D. Fe

Q. 37 In $K_4[Fe(CN)_6]$, the no. of ligands is:
A. 6
B. 4
C. 5
D. 3

Q. 38 Complex compounds have:
A. Complex molecule
B. Complex ions capable of independent existence
C. Carination sphere enclosing ligand and central metal
D. Al of these

Q. 39 Oxalate ion is not considered as
A. Monodentate legend
B. Poly dentate legend
C. Negatively charge ligand
D. Chelating legend

ANSWER KEY

1	B	11	C	21	A	31	C
2	A	12	B	22	D	32	D
3	B	13	B	23	B	33	D
4	A	14	D	24	C	34	C
5	D	15	C	25	B	35	B
6	D	16	B	26	A	36	D
7	D	17	B	27	C	37	A
8	A	18	B	28	C	38	D
9	A	19	D	29	D	39	A
10	C	20	B	30	A		

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Topic 13 FUNDAMENTAL CONCEPTS OF ORGANIC CHEMISTRY

PRACTICE EXERCISE

Q. 1 Which of the following does not show metamerism?

A. Ehters
B. Secondary amines
C. Ketones
D. Aldehydes

Q. 2 What are the products of destructive distillation of coal?

A. Coal tar
B. Coke
C. Coal gas
D. All of above

Q. 3 Water usually does not dissolve in water

A. Lipids
B. Benzene
C. Parrafins
D. All of these

Q. 4 Which of the following is not a heterocyclic?

A. Pyrole
B. Furan
C. Thiophene
D. Naphthalene

Q. 5 In homologous series, compound are differ by

A. CH_2
B. CH_3
C. CH_4
D. All

Q. 6 Pi bonds in ethene is / are

A. 1
B. 2
C. 3
D. 4

Q. 7 Which of the following is not in organic

A. Diamond
B. Graphite
C. Synthetic rubber
D. Solid iodine

Q. 8 Which of the following is not a derivative of benzene

A. Pyrrole
B. Furan
C. Thiophene
D. All

Q. 9 Coal tar contains many organic compounds that can be separated by _____?

A. Destructive distillation
B. Fractional distillation
C. Vacuum distillation
D. Partial distillation

Q. 10 Large hydrocarbons are converted into smaller hydrocarbons by a process called as?

A. Reforming
B. Cracking
C. Distillation
D. Decomposition

Q. 11 What is the octane number of Iso-octane?

A. 40
B. 100
C. 0
D. 2

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Q. 12 Propene exhibit

A. Cis-isomerism
B. Trans-isomerism
C. Geometric isomerism
D. None

Q. 13 Cyclic compounds consist of except?

A. Alicyclic
B. Aromatic
C. Acyclic compounds
D. Carbocyclic compounds

Q. 14 Organic compounds in which tetravalency of carbon atom is satisfied are called as ___?

A. Saturated
B. Unsaturated
C. Alkenes
D. Alkynes

Q. 15 OH- is added when reaction is in

A. Acidic medium
B. Neutral solution
C. Basic medium
D. All of these

Q. 16 Which type of organic compounds are present in natural gas?

A. High molecular mass
B. Low molecular mass
C. Low boiling point
D. Both b and c

Q. 17 Free radical reactions take place in the presence of _____?

A. Heat
B. Sunlight
C. Catalyst
D. Oxygen

Q. 18 Formula of ammonium cyanate

A. NH_4CNO
B. $(NH_2)_2CO$
C. $H_2N\text{-}NH_2$
D. NH_4CN

Q. 19 Octane number of n heptane is

A. 0
B. 1
C. 50
D. 100

Q. 20 C-C bond is broken in

A. Hydrogenation
B. Cracking
C. Condensation
D. Polymerization

Q. 21 Organic compounds are

A. Cyclic and acyclic
B. Open chain and acyclic
C. Closed chain and cyclic
D. Aliphatic and open chain

Q. 22 The isomerism arise due different Carbon atom on both sides of functional group is called

A. Metamerism
B. Functional group isomerism
C. Chain isomerism
D. Tautomerism

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Q. 23 Octane number of iso octane:
A. 2
B. 100
C. 400
D. 0

Q. 24 Formula of alkane
A. C_nH_{2n+2}
B. C_nH_{2n}
C. C_nH_{2n-2}
D. $C_nH_{2n-1}OH$

Q. 25 Which type of bonds are break during cracking
A. C – C
B. C – H
C. Both C – C and C – H
D. C – O

Q. 26 What is the common name of the compound? $CH_3–(CH_2)_3–CH_2–Cl$
A. Chloropentane
B. n-Chloropentane
C. n-Pentyl chloride
D. 1-Chloropentane

Q. 27 How many chain isomers of Pentane is possible?
A. Two
B. Four
C. Three
D. Five

Q. 28 Friedrich prepared UREA from
A. Amino acids
B. Ammonium carbonate
C. Ammonium cyanate
D. Xanthin

Q. 29 The smallest alkane that shows isomerism is _____?
A. Ethane
B. Butane
C. Pentane
D. Isopropane

Q. 30 An atom or group of atom that gives specific properties to the compound is called as _____?
A. Functional groups
B. Alkane
C. Homologous series
D. Atoms

Q. 31 Tetra ethyl lead addition to petrol is example of
A. Positive catalysis
B. Negative catalysis
C. Both A and B
D. None

Q. 32 Mineral oil in it's refined form is called?
A. Kerosene oil
B. Crude oil
C. Petroleum
D. Reforming

ANSWER KEY

1	D	11	B	21	A	31	B
2	D	12	D	22	A	32	C
3	D	13	C	23	B		
4	D	14	A	24	A		
5	A	15	C	25	A		
6	A	16	D	26	C		
7	C	17	B	27	C		
8	D	18	A	28	C		
9	B	19	A	29	B		
10	B	20	B	30	A		

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PM

Q. 1

Topic 14 CHEMISTRY OF HYDROCARBONS

PRACTICE EXERCISE

Q. Q. 1 Alkanes are called as _____?

A. Olefines
B. Paraffins
C. Reactive
D. All of these

Q. Q. 2 Ethene has pi bonds?

A. 1
B. 2
C. 3
D. 4

Q. 3 If two substituents are present at 1,4 positions then the isomer is called as _____?

A. Ortho
B. Meta
C. Para
D. None of these

Q. 4 Benzene does not show

A. Addition reactions
B. Substitution receptions
C. Elimination reactions
D. Oxidation reactions

Q. 5 General formula of alkanes is

A. $C_nH_{2n}O_2$
B. C_nH_{2n+2}
C. C_nH_{2n-2}
D. C_nH_{2n}

Q. 6 Benzene gives how many Monosubstituted products?

A. 2
B. 1
C. 4
D. 3

Q. 7 Hydrocarbon X has higher boiling point Hydrocarbon Y has lower boiling point

A. X is more flammable than Y
B. X is more viscous than Y
C. X has more no. of carbon atoms than Y
D. X is a large molecule than Y

Q. 8 The formation of vegetable ghee from vegetable oil is called

A. Hydrogenation
B. Dehydrogenation
C. Hardening of oil
D. Both A and C

Q. 9 When carbon atoms increase in chain

A. Boiling point low
B. Volatility high
C. More viscous
D. More flammable

Q. 10 When one vinyl chloride reacts with other two vinyl chloride they will give us

A. Divinyl chloride
B. Polyvinyl chloride
C. Trivinyl chloride
D. Tetra vinyl chloride

Q. 11 Which of the following is marsh gas

A. Methane
B. Ethane
C. Propane
D. Butane

Q. 12 Number of pi bonds in ethene is / are

A. 1
B. 2
C. 3
D. 4

Q. 13 In conversion of alkene to alcohol,reagent is

A. KOH
B. KCl
C. H_2SO_4
D. HNO_3

Q. 14 Which of the following is produced in propagation

A. Cl
B. CH_3Cl
C. Cl_2
D. CH_2

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Q. 15 Pi bonds in ethene
A. 1
B. 2
C. 3
D. 4

Q. 16 Hydrogenation of alkenes takes place in the presence of _____?
A. Nickel
B. Palladium
C. Gold
D. Raney nickel

Q. 17 Which one of the following is correct value of resonance energy of benzene?
A. 155.5 kJ/mol
B. 150.5 kJ/mol
C. 170 kJ/mol
D. 140.5 kJ/mol

Q. 18 Which of the following group is ortho-para directing group _____?
A. -COOH
B. -CN
C. -COR
D. -OH

Q. 19 Aromatic benzene ring is
A. Saturated
B. Unsaturated
C. Cyclohexane
D. B and C both

Q. 20 Free radical mechanism is used in:
A. Addition reactions
B. Elimination reactions
C. Electrophilic substitution
D. Free radical substitution

Q. 21 The organic compounds having double bond
A. Alkanes
B. Alkenes
C. Alkynes
D. Alkyl halides

Q. 22 Alkenes can be prepared from alcohols by:
A. Dehydration
B. Dehalogenation
C. Dehydrohalogenation
D. All of these

Q. 23 The reaction in which benzene is reacted with alkyl or acyl halide in the presence of $AlCl_3$ is called as _____?
A. Aldol condensation
B. Wittig reaction
C. Wolf kishner reaction
D. Friedel and craft reaction

Q. 24 The two pi bonds in ethyne molecule are:
A. Parallel to the sigma bond
B. At 19.5° to the sigma bond
C. At 45° to the sigma bond
D. Perpendicular to the sigma bond

Q. 25 Which of the following gives Markovnikov's product with propene?
A. HBr
B. H_2SO_4/H_2O
C. HBr
D. All of these

Q. 26 Which of the following has one acidic hydrogen in it?
A. Acetylene
B. 2-propene
C. 2-pentyne
D. 1-pentyne

Q. 27 Polymerization of ethene produces which of the following polymer?
A. Polyvinyl
B. Polethyl
C. Polyethylene
D. Polyethoxy

Q. 28 An aromatic compound that can obtained from coal tar is
A. Benzene
B. Toluene
C. Phenol
D. Diphenylmethane

Q. 29 The reaction in which benzene is reacted with alkyl or acyl halide in the presence of $AlCl_3$ is called as _____?
A. Aldol condensation
B. Wolf kishner reaction
C. Witting reaction
D. Friedel and craft reaction

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Q. 30 Which of the following method is used to prepare ethylene glycol from ethene?

A. Dehydration
B. Hydroxylation
C. Hydration
D. Lucas test's

Q. 31 The presence of double bond in a compound shows that the compound has _____?

A. Saturation
B. All signal bonds
C. Unsaturation
D. Substitution

Q. 32 Which of the following act as electrophile during nitration of benzene?

A. NO^+
B. NO_2^+
C. NO_3^+
D. HNO_2^+

Q. 33 Which of the following Grignard reagents react to form alkanes?

A. Ammonia
B. Water
C. Methanol
D. All of these

Q. 34 In benzene molecule c-atom is

A. dsp^2 hybridized
B. sp hybridized
C. sp^2
D. sp^3

ANSWER KEY

1	B	11	A	21	B	31	C
2	A	12	A	22	D	32	B
3	C	13	C	23	D	33	D
4	C	14	B	24	D	34	C
5	B	15	A	25	D		
6	B	16	D	26	D		
7	A	17	B	27	C		
8	D	18	D	28	B		
9	C	19	D	29	D		
10	C	20	D	30	B		

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Topic 15

ALKYL HALIDES

PRACTICE EXERCISE

Q.1 In IUPAC nomenclature, alkyl halides are named as _____?
A. Alkyl halogens
B. Halogenoalkanes
C. Haloalkanes
D. Alkyl halides

Q.2 Grignard reagent is reactive due to:
A. polarity of C-Mg bond
B. presence of C-Mg bond
C. presence of Mg
D. Polarity of Mg-Cl bond

Q.3 Grignard reagents are made in the presence of __
A. dry ether
B. hydrated ether
C. Acetone
D. Chloroform

Q.4 What is the correct order of reactivity of alkyl halides
A. R-Cl>R-Br>R-F>R-I
B. R-I>R-Br>R-Cl>R-F
C. R-I>R-Cl>R-Br>R-F
D. None of these

Q.5 S_N1 reactions have which of the following specie formed and consumed in the reaction
A. Transition state
B. Intermediate
C. Carbanion
D. Carbene

Q.6 Which of the following is a poor leaving group in nucleophilic substitution reactions?
A. Cl^-
B. Br^-
C. I^-
D. OH^-

Q.7 In which phase, SN_2 reactions are favored?
A. Solid
B. Liquid
C. Gas
D. All of these

Q.8 Grignard reagent reacts with _____ to form alkane
A. Water
B. Ammonia
C. Alcohol
D. All of these

Q.9 Alkyl halide in which halogen is attached to one carbon atom such carbon which is not attached to further carbon
A. Primary
B. Secondary
C. Tertiary
D. Quaternary

Q.10 Same first step
A. E_1, S_N1
B. E_2, S_N2
C. E_1, S_N2
D. E_2, S_N1

Q.11 Reaction followed by primary alkyl halide is
A. S_N1
B. S_N2
C. Both
D. E_1

Q.12 Alkyl halides show which of following reaction
A. Electrophile
B. Polymerization
C. Nucleophilic substitution
D. Nucleophilic elimination

Q.13 In a reaction having both alkyl halide and base, the base will attack on _____?
A. Electrophilic carbon
B. Nucleophilic carbon
C. Beta-hydrogen
D. None of these

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Q. 14 In S_N2 reaction, nucleophile attacks on the electrophilic carbon?
A. From the side of leaving group
B. Opposite to leaving group
C. In front of leaving group
D. Below leaving group

Q. 15 The rate of SN_1 reaction become doubled if _____?
A. Concentration of nucleophile doubled
B. Concentration of substrate doubled
C. Concentration of substrate tripled
D. Concentration of substrate remain same

Q. 16 Which one of the following is an electrophile?
A. Br^-
B. CH_4
C. NH_3
D. H_2O

Q. 17 Which alkyl halide give S_N1 reactions
A. Secondary
B. Primary
C. Tertiary
D. All of these

Q. 18 Which of the following compete with each other
A. E_1, E_2
B. E_1, S_2
C. E_2, S_1
D. E_2, S_2

Q. 19 Alkyl halides give.
A. Nucleophilic substitution reaction
B. Nucleophilic addition reaction
D. Electrophilic substitution
D. Electrophilic addition

Q. 20 In beta elimination, nucleophile attack on
A. Alpha hydrogen
B. Beta Hydrogen
C. Alpha carbon
D. None of these

Q. 21 Which one of the following is not a secondary alkyl halide?
A. 2-Chloropropane
B. 3-Bromobutane
C. 2,3-Dichloropentane
D. 2-Chloro-2-methylpentane

Q. 22 Reactivity of alkyl halides can be determined by
A. carbon-halogen bond
B. carbon-carbon bond
C. carbon-hydrogen bond
D. halogen-halogen bond

Q. 23 Elimination reaction for ethyl chloride is
A. S_N2
B. E_2
C. S_N1
D. E_1

Q. 24 Alkyl halides generally give which type of elimination reactions?
A. Alpha-elimination
B. Gamma-elimination
C. Beta-elimination
D. Syn-elimination

Q. 25 Which is the best method for production of alkyl halide
A. Alcohol+PCl_5 PBr_3
B. Alcohol+$SOCl_2$ pyridine
C. Alcohol +HX
D. All of these

Q. 26 Alkyl halide give
A. Addition reaction
B. Elimination reactions
C. Nucleophilic substitution reaction
D. Both B and C

Q. 27 Alkyl halide is formed from alcohol by
A. Nucleophilic substitution
B. Nucleophilic addition
C. Nucleophilic addition
D. Elimination

Q. 28 Which of the following is more reactive
A. C_2H_5F
B. C_2H_5Br
C. C_2H_5I
D. C_2H_5Cl

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Q. 29 Which are not directly prepared

A. RCl
B. RI
C. RF
D. RBr

Q. 30 Good nucleophile as well as good leaving group is

A. Br-
B. Cl-
C. I-
D. F^{-1}

Q. 31 Reaction of alkyl halide with aqueous KOH

A. Elimination
B. Substitution reaction
C. Both
D. None

Q. 32 1-propanol gives Lucas test on a heating

A. 5-10 minutes
B. Immediately
C. On heating
D. No reaction

Q. 33 General formula of Grignard's reagent

A. RMgX
B. R Mg
C. Both
D. None

Q. 34 Sn1 reactions are favored in

A. Polar solvent
B. Small carbon chain
C. High temperature
D. AlC KOH

ANSWER KEY

1	C	11	B	21	D	31	B
2	A	12	C	22	A	32	C
3	A	13	C	23	B	33	A
4	B	14	B	24	C	34	A
5	B	15	B	25	A		
6	D	16	A	26	D		
7	C	17	B	27	A		
8	D	18	D	28	C		
9	A	19	A	29	B		
10	A	20	B	30	C		

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Topic 16 ALCOHOLS AND PHENOLS

PRACTICE EXERCISE

Q. 1 The compounds which are formed by the replacement of one of the H of water by a alkyl group are called as _____?

A. Ethers
B. Phenols
C. Alcohols
D. Carboxylic acids

Q. 2 Dehydration of alcohols at low temperature and high acid concentration results in?

A. Alkene
B. Ether
C. Carboxylic acid
D. Aldehydes

Q. 3 Who first extracted phenol?

A. Wohler
B. Runge
C. Wittig
D. Wurtz

Q. 4 How many hydrogen atoms are attached to tertiary carbon in tertiary butyl alcohol?

A. 3
B. 2
C. 1
D. 0

Q. 5 Ethanol forms yellow crystal with iodine in the presence of

A. KOH
B. Conc H_2SO_4 at 14°C
C. NaOH
D. Both A and C

Q. 6 Phenol reacts with calcium carbonate and evolve ____?

A. H_2 gas
B. CO_2 gas
C. O_2
D. None of these

Q. 7 Which of following is an example of electrophilic attack on alcohols?

A. $C_2H_5OH+CH_3COOH \longrightarrow H_2SI_4$
B. $2C_2H_5OH+2Na \longrightarrow 2CH_3ONa+H_2$
C. $C_2S_3OH+HCl \longrightarrow ZnCl_2C_2H_5Cl+H_2O$
D. Both A and B

Q. 8 Which of the following does not react with bases?

A. Carboxylic acids
B. Ethanol
C. Phenol
D. HCl

Q. 9 Which of the following catalyst is used in the industrial preparation of methanol?

A. Zinc oxide and alumina
B. Alumina and silica
C. Silica and chromium oxide
D. Zinc oxide and chromium oxide

Q. 10 Bakelite is

A. Phenol + Methanal
B. Phenol + Formaldehyde
C. Phenol + Acetaldehyde
D. Both A and B

Q. 11 Optimum temperature range for the process of fermentation is

A. 2–3 °C
B. 25–35 °C
C. 27 – 33°C
D. 4– 45°C

Q. 12 Which of the following does not react with bases?

A. Carboxylic acids
B. Phenol
C. Ethanol
D. HCl

Q. 13 Which of the following compound shows strong H-bonding with water?

A. C_2H_6
B. CH_3Br
C. CH_3OCH_3
D. C_2H_5OH

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Q. 14 Which of the following is easily formed during SN_1 reactions?
A. Secondary carbocation
B. Primary carbocation
C. Tertiary carbocation
D. Methyl carbocation

Q. 15 Phenol is _____ liquid
A. Dense
B. Hard
C. Deliquescent
D. Intermittent

Q. 16 How phenol is produced from the chlorobenzene?
A. Using Kolb's method
B. Using Dow's method
C. Using Zn dust
D. All of above

Q. 17 Propanol reacts with HCl / $ZnCl_2$ to give a alkyl halide
A. On heat
B. After 5 minutes
C. Never
D. Immediately

Q. 18 Conc. HNO_3 react with phenol to form
A. o-Nitrophenol
B. p-Nitrophenol
C. Picric acid
D. m-Nitrophenol

Q. 19 Bakellite is formed by combination of
A. Aldehyde and phenol
B. Formaldehyde and phenol
C. Formaldehyde and ethanol
D. Acetaldehyde and ethanol

Q. 20 Phenol and alcohol react with Na metal to form salt and _ both form hydrogen gas
A. Both form water
B. Ethanol form H_2 and phenol form water
C. Both form H_2 gas
D. Both form H_2O

Q. 21 Ethanol is prepared on a large scale by
A. Hydration of alkanes
B. Fermentation
C. Distillation of wood
D. Williamson's synthesis

Q. 22 The alcohols having one hydroxyl group attached to the alkyl group are called as _____?
A. Monohydric alcohols
B. Dihydric alcohols
C. Trihydric alcohols
D. Polyhydric alcohols

Q. 23 Alcohol and phenol on reaction with metal gives
A. H_2
B. O_2
C. N_2
D. SO_2

Q. 24 Bakellite is polymer of
A. Aldehyde + benzene
B. Phenol + formaldehyde
C. Phenol + acetic acid
D. Phenol + resorcinol

Q. 25 Phenol gives benzene on heating with
A. Zn
B. Mn
C. Fe
D. Ag

Q. 26 Lucas test is used to distinguish
A. Alcohols
B. Alkenes
C. Carbonylic acids
D. Phenols

Q. 27 Reactivity of phenol is due to
A. Benzene ring
B. OH group
C. C–H polarity
D. Both A and B

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Q. 28 Product formed in addition to salt when phenol and alcohol react with sodium metal

A. Both form water
B. Both form hydrogen gas
C. Ethanol form hydrogen gas and phenol form water
D. Phenol form hydrogen gas and ethanol form water

Q. 29 Bakelite formed

A. When formaldehyde react with phenol
B. Phenol react with acetaldehyde
C. Phenol react with alcohol
D. Phenol reacts with paraldehyde

Q. 30 Picric acid is

A. Monocarboxylic
B. Dicarboxylic acid
C. Tricarboxylic acid
D. Acidic phenol

Q. 31 Phenol reacts with NaOH to form

A. Acid
B. Base
C. Salt
D. Ester

ANSWER KEY

1	C	11	B	21	B	31	C
2	A	12	C	22	A		
3	B	13	D	23	A		
4	D	14	C	24	B		
5	D	15	C	25	A		
6	D	16	B	26	A		
7	D	17	A	27	D		
8	B	18	C	28	A		
9	D	19	B	29	A		
10	D	20	C	30	D		

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Topic 17

ALDEHYDES AND KETONES

PRACTICE EXERCISE

Q. 1 During catalytic reduction of carbonyl compounds, hydrogen adds across
A. C = C
B. C – H
C. C = O
D. All of these

Q. 2 Which of the following show positive iodoform test
A. Butanol
B. Acetaldehyde
C. 3-Pentanone
D. Formaldehyde

Q. 3 Symmetrical ketone
A. Propanone
B. 3-hexanone
C. Butanone
D. Acetophenone

Q. 4 Reduction of aldehydes give
A. Primary alcohol
B. Secondary alcohol
C. Tertiary alcohol
D. None

Q. 5 Urotropine is formed by
A. Formaldehyde
B. Acetaldehyde
C. Acetone
D. Benzene

Q. 6 Which is not the use of acetaldehyde?
A. Making phenolic resins
B. Silvering of mirrors
C. Used as antiseptic Inhalant
D. Used in vat dying

Q. 7 How many carbon attached to carbonyl carbon in ketone
A. 2
B. 3
C. 4
D. 1

Q. 8 Acetals are
A. Aldehydes
B. Ketones
C. Alcohols
D. Ether

Q. 9 Formaldehyde have formyl group
A. Inside the chain
B. Middle of chain
C. At the terminal
D. At any position of the chain

Q. 10 In aldol condensation carbanion acts as
A. Acid
B. Base
C. Nucleophile
D. Electrophilic

Q. 11 Which aldehyde is gas at room temperature
A. Formaldehyde
B. Acetaldehyde
C. Propanol
D. Benzaldehyde

Q. 12 Which one is symmetrical
A. Acetone
B. 2 pentanone
C. 3-Hexanone
D. Butanone

Q. 13 During canizaro's reaction, which of the following act as nucleophile
A. Hydride ion
B. Methoxide ion
C. Hydroxide ion
D. Both A and C

Q. 14 Addition of HCN to the carbonyl compound results in ___ hybridization.
A. sp^3
B. sp^2
C. sp
D. dsp^2

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Q. 15 Ketones do not give:
A. Addition of $NaHSO_3$
B. formation of oxime
C. reduction of Fehling solution
D. Reaction with 2,4 DNPH

Q. 16 Ketones can be prepared by the oxidation of:
A. Pri. Alcohol
B. Sec. alcohol
C. Ter. Alcohol
D. none

Q. 17 Cyanohydrin reacts with acetaldehyde to form
A. Lactic acid
B. Sali-cyclic acid
C. Benzoic acid
D. Malonic acid

Q. 18 In IUPAC nomenclature, aldehydes are named as _____?
A. Alkanol
B. Alkanal
C. Alkanone
D. Alkaldehyde

Q. 19 The carbonyl compound which is attached with at least one H atom at one side is called as _____?
A. Ketones
B. Aldehydes
C. Ethers
D. Alkyl halides

Q. 20 What is the color of iodoform precipitates?
A. White
B. Reddish
C. Black
D. Yellow

Q. 21 $NaBH_4$ causes reduction of aldehyde and ketones into _____?
A. Alcohols
B. Alkenes
C. Phenols
D. Alkanes

Q. 22 Aldehydes and ketones react with hydroxyl amine and produce?
A. Imine
B. Oxime
C. Aldol
D. Nitrile

Q. 23 From which of the following ketone can be prepared?
A. Propyne
B. Secondary alcohol
C. Ca Acetate
D. All of these

Q. 24 Before giving condensation product, ammonia and its derivatives produces _____ when react with carbonyls?
A. Alcohols
B. Carboxyl alcohol
C. Amino alcohol
D. None of these

Q. 25 Carbonyl system having no alpha hydrogen undergoes _____?
A. Aldol condensation
B. Cannizzaro reaction
C. Haloform reaction
D. Oxidation reaction

Q. 26 Geometry of acetal
A. Tetrahedral
B. Hexagonal
C. Trigonal
D. Angular

Q. 27 In aldehyde group, carbonyl group is attached to at least
A. One hydrogen atom
B. one carbon atom
C. Two hydrogen atoms
D. Two carbon atom

Q. 28 Bulky ketones do not react with
A. Sodium bisulphite
B. HCl
C. Grignard reagent
D. HCN

. 29 Which of the following test is not given by aldehyde?
A. Benedict test
B. Tollen's test
C. Nitroprusside test
D. Fehling's test

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Q. 30 Acetaldehyde undergoes polymerization with conc. H_2SO_4 and form _____?

A. Acetylides
B. Paraldehyde
C. Bakelite
D. Meta Acetaldehyde

Q. 31 General formula of aldehyde and ketone

A. $C_nH_{2n}O$
B. C_nH_nO
C. $C_nH_nO_2$
D. $C_nH_{2n}O_2$

Q. 32 Sodium nitroprusside test is shown by

A. Aldehyde
B. Ketone
C. Alcohol
D. Phenol

Q. 33 Reaction of ethyl magnesium bromide with acetone produces?

A. Primary alcohol
B. Secondary alcohol
C. Tertiary alcohol
D. Methyl alcohol

Q. 34 Reagent like $K_2Cr_2O_7$ and H_2SO_4 lead to _____?

A. Reduction
B. Dehydration
C. Hydrolysis
D. Oxidation

Q. 35 During reduction of aldehydes with $NaBH_4$, which of the following intermediate is formed?

A. Carbanion
B. Carbene
C. Carbocation
D. Alkoxide ion

Q. 36 Aldehyde are

A. Strong reducing agent
B. Strong oxidizing agent
C. Weak reducing agent
D. None of these

Q. 37 Acetylene reacts with H_2SO_4 and $HgSO_4$ to form:

A. Enolate
B. Acetaldehyde
C. Enols
D. Crotonaldehydre

Q. 38 Hydrocarbon X has higher boiling point Hydrocarbon Y has lower boiling point

A. X is more flammable than Y
B. X is more viscous than Y
C. X has more no. of carbon atoms than Y
D. X is a large molecule than Y

Q. 39 Ketones are formed by

A. Primary alcohol
B. Secondary alcohol
C. Tertiary alcohol
D. All

Q. 40 Ketone undergo reduction to form

A. Pri alcohol
B. Sec alcohol
C. Tertiary alcohol
D. Benzyl alcohol

Q. 41 Acetaldehyde is prepared commercialy from

A. Ethene
B. Ethyne
C. Calcium acetate
D. Ethanol

Q. 42 Hemiacetal formation is

A. Nucleophilic addition
B. Nucleophilic substitution
C. Electrophilic addition
D. Electrophilic substitution

Q. 43 Which of the following give tertiary alcohol on reaction with Grignard reagent

A. Ketone
B. Aldehyde
C. Alcohol
D. Epoxide

Q. 44 Reduction of benzaldehyde by clammenson reduction method gives

A. $C_6H_5NH_2$
B. $C_6H_5CH_3$
C. CH_4
D. Both B and C

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Q. 45 Oxidation of primary alcohol yield

A. Aldehdye
B. ketone
C. Both A and B
D. None of these

Q. 46 The reaction of carbanion in aldol condensation with second molecule of aldehyde is

A. Nucleophilic addition
B. Nucleophilic substitution
C. Electrophillic addition
D. Electrophilic substitution

Q. 47 Methyl ketones are distinguished by

A. Iodoform test
B. Lucas test
C. Fehling's test
D. Tollen's reagent test

Q. 48 Used in processing of antipolio vaccine

A. Acetaldehyde
B. Formaldehyde
C. Acetone
D. Butanone

Q. 49 Brick test is used for

A. Aldehyde
B. Ketone
C. Ester
D. Benzene

ANSWER KEY

1	C	11	A	21	A	31	A	41	A
2	B	12	A	22	B	32	B	42	A
3	A	13	D	23	D	33	C	43	A
4	A	14	A	24	C	34	D	44	B
5	A	15	A	25	B	35	D	45	A
6	A	16	B	26	A	36	A	46	A
7	A	17	A	27	A	37	B	47	A
8	C	18	B	28	A	38	A	48	B
9	C	19	B	29	C	39	B	49	A
10	C	20	D	30	B	40	B		

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Topic 18 CARBOXYLIC ACIDS

PRACTICE EXERCISE

Q. 1 Fruity smell of organic compounds is because of _____?

A. Alcohols
B. Carboxylic acids
C. Ester
D. Acid halides

Q. 2 From which of the following sources, acetic acid was first isolated?

A. Butter
B. Milk
C. Cheese
D. Vinegar

Q. 3 Acetic acid is used to prepare:

A. acetone
B. acetate
C. esters
D. All

Q. 4 Which is formed when hydrogen is added to the carboxylic group?

A. formaldehyde
B. ketone
C. formic acid
D. Methane

Q. 5 Number of oxygen in cyclic ring of dimer of carboxylic acid are

A. 2
B. 4
C. 5
D. 6

Q. 6 Which of the following is used in perfumes

A. Alcohol
B. Aldehyde
C. Ketone
D. Carboxylic acids

Q. 7 Which is formed when hydrogen is added to the carboxylic group in presence of HI in Phosphorous

A. formaldehyde
B. ketone
C. formic acid
D. Aethane

Q. 8 Acetic acid is used to prepare:

A. Acetone
B. Acetate
C. Esters
D. All

Q. 9 Which is dibasic carboxylic acid

A. Formic acid
B. Acetic Acid
C. Oxalic acid
D. Valeric acid

Q. 10 In benzene, carboxylic acids exist as _____?

A. Polymers
B. Dimers
C. Individually
D. Trimers

Q. 11 Which of the following catalyst is used for the preparation of acidic anhydrides?

A. $K_2Cr_2O_7$
B. P_2O_5
C. H^+/H_2O
D. H_2SO_4

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Q. 12 The reaction of carboxylic acids which involve H atom removal of OH group from _____ as major products in all reactions?

A. Esters
B. Nitriles
C. Ketones
D. Salts

Q. 13 Which of the following is most soluble in water?

A. Ethanoic acid
B. Pentonic acid
C. Hexanoic acid
D. Butanoic acid

Q. 14 Formic acid is obtained from _____?

A. Apples
B. Butter
C. Ant's sting
D. Foam

Q. 15 When two carboxylic acids are strongly heated in the presence of P_2O_5, which product is formed?

A. Acid halides
B. Dimer
C. Acid anhydride
D. None of these

Q. 16 Which of the following is a carboxylic acid derivative?

A. Alcohol
B. Acetic acid
C. Acyl halide
D. Methyl halide

Q. 17 Which of the following is weaker acid?

A. HCl
B. H_2SO_4
C. CH_3COOH
D. H_3PO_4

Q. 18 How carboxylic acids are formed from alcohol?

A. Hydrolysis
B. Reduction
C. Oxidation
D. Protonation

Q. 19 Acetic acid is also named as _____?

A. Propanoic acid
B. Ethanoic acid
C. Butanoic acid
D. Methanoic acid

Q. 20 Flavour of amyl butyrate?

A. Apricot
B. Banana
C. Raspberry
D. None

Q. 21 All are aliphatic carboxylic acids except

A. Methanoic acid
B. Ethanoic acid
C. Benzoic acid
D. Lactic acid

Q. 22 Which of the following causes complete reduction of carboxylic acid into alkanes?

A. H_2/Ni
B. HI/P
C. Pd/C
D. $LiAlH_4$

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Q. 23 Other name of oxalic acid is
A. Ethanoic acid
B. Ethanedioic acid
C. Malonic acid
D. Succinic acid

Q. 24 Which one of the following is not fatty acid
A. Acetic acid
B. Butanoic acid
C. Phthalic acid
D. Steric acid

Q. 25 Carboxylic acid with alcohol is called
A. Esterification
B. Saponification
C. Hardening
D. Rancidity

Q. 26 An amino acid and alcohol is mixed which product will be formed?
A. Ether
B. Ester
C. Carbolic acid
D. Alkane

Q. 27 Phthalic acid is
A. monocarboxylic acid
B. Dicarboxylic acid
C. Unsaturated Monocarboxylic acid
D. Fatty acid

Q. 28 When fat react with NaOH the reaction is called
A. Esterification
B. Saponification
C. Hydrolysis
D. Hardening

Q. 29 Which of the following is used as a coagulant for latex in rubber industry
A. Formic acid
B. Acetaldehyde
C. Acetic acid
D. Acetaldehyde

Q. 30 Glycine is an amino acid which is present in solution as
A. Acid
B. Base
C. Zwitter ion
D. All

Q. 31 Reverse of esterification is
A. Saponification
B. Hydrolysis
C. Bakelite
D. Rancidity

Q. 32 Phthalic acid
A. Monocarboxylic aliphatic acid
B. Dicarboxylic aromatic acid
C. Monocarboxylic aromatic acid
D. Dicarboxylic aliphatic acid

Q. 33 Which one is weak acid
A. Acetic acid
B. Formic acid
C. Propanoic acid
D. Butanoic acid

ANSWER KEY

1	C	11	B	21	C	31	B
2	D	12	D	22	B	32	B
3	D	13	A	23	B	33	D
4	D	14	C	24	C		
5	B	15	C	25	A		
6	A	16	C	26	A		
7	D	17	C	27	B		
8	D	18	C	28	B		
9	C	19	B	29	C		
10	B	20	A	30	C		

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Topic 19 MACROMOLECULES

PRACTICE EXERCISE

Q. 1 After digestion, proteins change into
A. Amino acids
B. Starch
C. Glycogen
D. Lipids

Q. 2 Nucleoprotein are _____ proteins which transfer heredity information from one generation to other
A. Transport proteins
B. Structural proteins
C. Genetic proteins
D. Regulatory proteins

Q. 3 In which of the following body part, protein is not present?
A. Skin
B. Hair
C. Nails
D. Bones

Q. 4 Protein is a polymer of _____?
A. Nitrogen atoms
B. Amino acids
C. Glucose
D. Nitrogenous base

Q. 5 Globulins protein upon hydrolysis yield amino acids or their derivatives, so they belong to which type of protein
A. Derived proteins
B. Compound proteins
C. Conjugated proteins
D. Simple proteins

Q. 6 Regular coiling and twisting of polypeptide chain caused by H-bonding in between NH and CO occurs _____.
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q. 7 The substances which reduce the activity of enzyme action are called as _____?
A. Reducers
B. Activators
C. Promotors
D. Inhibitors

Q. 8 Which enzyme is raised in rickets:
A. Alkaline phosphatase
B. LDH-1
C. Acidic phosphatase
D. None

Q. 9 The specific site at which substrate is attached on the enzyme and converted into product is called as _____?
A. Reaction site
B. Active site
C. Binding site
D. None of these

Q. 10 The substance that is attached to the enzyme at specific place and converted into product is called as
A. Co-factor
B. Iso-zyme
C. Active site
D. Substrate

Q. 11 Which of the following is produced by heating of bones?
A. Gelatin
B. Cheese
C. Albumin
D. Gelly

Q. 12 Casein is used in manufacturing of _____.
A. Buttons and Buckles
B. Tanning of leather
C. Gelatin
D. Bakery goods

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Q. 13 _____ **enzyme catalyzes the conversion of hexoses to 6-phosphate derivatives.**
A. Hexokinase
B. Glucokinase
C. Fructokinase
D. Malonic acid

Q. 14 Urease is present in
A. Yeast
B. Grapes
C. Soya sauce
D. Soya bean

Q. 15 Carboxylase are example of which type of enzyme:
A. Hydrolases
B. Transferases
C. Lyases
D. Ligases

Q. 16 Coagulated proteins is
A. Non soluble
B. Non folded
C. Non-functional
D. All

Q. 17 Nylon 6,6 is a
A. Epoxy resin
B. Polyamide
C. Polyester resin
D. PVA

Q. 18 Pesticides and insecticides are made of
A. Organic compound
B. Inorganic compounds
C. Carboxylic acids
D. All of the above

Q. 19 Number of polymers on basis of monomers
A. 2
B. 3
C. 4
D. 5

Q. 20 LDH-1 is used in treatment of Rickets
A. Blood cancer
B. Heart disease
C. Rickets
D. Joundice

Q. 21 Enzyme binds with substrate to form
A. Enzyme substrate complex
B. Substarte
C. Enzyme
D. Products

Q. 22 Which is an inorganic macromolecule?
A. Diamond
B. synthetic fibre
C. plastic
D. proteins

Q. 23 Which of these is a synthetic polymer?
A. Polyester
B. proteins
C. Glucose
D. Starch

Q. 24 Which 1 is correct about polymer(plastic)?
A. Poly(propene) can be softened on heating
B. poly(propene) is too weak to make into ropes
C. poly(ethene) is more exposed to micro-organisms
D. Poly(ethene) is too expensive to make bottles

Q. 25 How many type of polymers on the basis of structure
A. Three
B. Four
C. Five
D. Six

Q. 26 Enzyme without co-enzyme is called
A. inhibitor
B. Activator
C. Apoenzyme
D. Holoenzyme

Q. 27 Staudinger proposed long chain formula for
A. Rubber
B. Polystyrene
C. Poly oxy methylene
D. All

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Q. 28 Most abundant macromolecule on earth
A. Protein
B. Carbohydrate
C. Lipid
D. Nucleic acid

Q. 29 Which of the following is addition polymer
A. PVC
B. Polyester
C. Both
D. None

Q. 30 Linkage in primary structure of protein
A. Peptide linkage
B. Disulphide
C. Hydrogen bond
D. Ionic bond

Q. 31 Protein is made of
A. Amino acids
B. Lipid
C. Carbohydrates
D. All

Q. 32 Addition polymerization occur through _____ mechanism
A. Free radical
B. Cationic
C. Anionic
D. All

Q. 33 Which of the following is example of thermosetting polymer
A. Epoxy resins
B. Synthetic varnish
C. Bakelite
D. All

Q. 34 Which is not an Inorganic macromolecule,
A. Synthetic Fibre
B. Diamond
C. Graphite
D. Sand

Q. 35 Coagulated protein is_____ protein
A. Non soluble
B. Non functional
C. Solid
D. All

Q. 36 In which polymers on heating instead of melting it breaks down:
A. Thermosetting
B. Thermoplastic
C. Homopolymer
D. Co-polymer

ANSWER KEY

1	A	11	A	21	A	31	A
2	C	12	A	22	A	32	D
3	D	13	A	23	A	33	D
4	B	14	D	24	A	34	A
5	D	15	D	25	A	35	D
6	B	16	D	26	C	36	A
7	D	17	B	27	D		
8	A	18	A	28	B		
9	B	19	B	29	A		
10	D	20	B	30	A		

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1 TOPIC FORCE AND MOTION

PRACTICE EXERCISE

Q.1 Under what condition an object will have zero displacement but non-zero distance.
A. Linear motion
B. Circular motion
C. Random motion
D. Oscillation

Q.2 What is the acceleration of a projectile relative to another projectile?
A. 0
B. g
C. 2g
D. –2g

Q.3 If the flock of birds is flying, total momentum will be zero if
A. Taking off from the ground
B. Very tired and coming down to rest
C. Flying in opposite direction
D. Flying in same direction

Q.4 The slope of distance – time graph will always be:
A. Negative
B. Positive
C. Zero
D. Maximum

Q.5 At what angle of projection of a projectile the range becomes half of its maximum value.
A. 14°
B. 15°
C. 20°
D. 40°

Q.6 If we drop an object, its initial velocity is zero. How far will it fall in time 't'?
A. $9.8\ t^2$
B. $4.9\ t^2$
C. $0.49\ t^2$
D. $98\ t^2$

Q.7 The newton-second is unit of:
A. Work
B. Impulse
C. Momentum
D. Both 'B' and 'C'

Q.8 Accelerating frame of reference which has constant acceleration is
A. constant moving car
B. moving train
C. free falling body on earth
D. none of these

Q.9 Vertical velocity vs time graph for a projectile motion
A. varies linearly
B. follow a parabolic path
C. is constant
D. is linear

Q.10 Pseudo forces arises in
A. Inertial frame
B. constant moving frame
C. rest frame of reference
D. accelerating frame of reference

Q.11 The frame of reference could be
A. Fixed always
B. not fixed always
C. at rest
D. none of these

Q.12 The magnitude of displacement is
A. Size of object A
B. Straight line distance between initial and final position
C. Size of object B
D. Any distance between initial and final position

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Q.13 A car travels 30m towards east, the it takes turn and travel 40 m towards west, it average velocity after 60s

A. $10ms^{-1}$
B. $1/5\ ms^{-1}$
C. $7/5\ ms^{-1}$
D. $-5\ ms^{-1}$

Q.14 Displacement of sun with respect to earth is

A. r
B. 2πr
C. 2r
D. r^2

Q.15 Instantaneous velocity is

A. Always positive
B. Always negative
C. Positive and negative
D. Not enough info

Q.16 If the displacement = 15m and time = 10seconds the average velocity is

A. 12.5m/s
B. 1.5 m/s
C. 2.5m/s
D. 3m/s

Q.17 Instantaneous velocity for a displacement function dt = 2 – 2t at any time is given by

A. -2t
B. 2t
C. 2
D. -2

Q.18 Decrease in velocity per unit time is called

A. Acceleration
B. deceleration
C. positive acceleration
D. uniform acceleration

Q.19 For a linear relationship between displacement and time, we get d-t graph as

A. Straight line passing through origin
B. straight line parallel to time axis
C. quadratic relationship
D. cubic relationship

Q.20 An object is moving with constant speed, which of the following is always true?

A. Distance is greater than displacement
B. distance is lesser than displacement
C. distance is equal to displacement
D. we cannot answer

Q.21 A stone is projected from the ground with a velocity of 25m/s. 2 seconds later, it just clears wall 5m high. Then angle of projection of the stone and the greatest height reached are- [Neglect air resistance, Assume g=10m/sec2]

A. 30°, 7.8m
B. 60°, 8.7m
C. 30°, 8.7m
D. 60°, 7.8m

Q.22 Acceleration of moving car when brakes are applied

A. Positive
B. negative
C. zero
D. none of these

Q.23 The slope of distance – time graph will always be:

A. Negative
B. Positive
C. Zero
D. Maximum

Q.24 The slope of velocity-time graph represents

A. displacement
B. acceleration
C. force
D. Momentum

Q.25 An object is accelerating

A. only when its speed changes.
B. only when its direction changes.
C. when its speed or direction changes.
D. if its velocity is large

Q.26 What is the slope of a straight line graph of position vs time?

A. Velocity
B. Displacement
C. Distance
D. Acceleration

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Q.27 If the velocity versus time graph of an object is a horizontal line, the object is
A. moving with zero acceleration.
B. moving with constant non-zero acceleration.
C. at rest.
D. moving with increasing speed

Q.28 The acceleration of a moving object can be found from
A. area under displacement-time graph
B. slope of displacement-time graph
C. area under velocity-time graph
D. slope of velocity-time graph

Q.29 The coefficient of restitution for a perfectly elastic collision is
A. 1
B. 0
C. ∞
D. -1

Q.30 Walking is possible on the account of
A. Newton's First Law of Motion
B. Newton's Second Law of Motion
C. Newton's Third Law of Motion
D. Newton's Law of Gravitation

Q.31 The coefficient of restitution e for a perfectly inelastic collision is
A. 1
B. 0
C. Infinity
D. -1

Q.32 When two bodies stick together after the collision, the collision is said to be
A. Partially elastic collision
B. Totally elastic collision
C. Totally inelastic collision
D. None of the above

Q.33 What is the accelerating force on the Diwali rocket if it ejects 0.05 kg of gases per second at a velocity of 400 m/s?
A. 20 N
B. 20 dynes
C. 1000 N
D. 22 dynes

Q.34 If mass is 2 kg and velocity is 35 m/s, then momentum is
A. 70 kg m/s
B. 90 kg m/s
C. 17.5 kg m/s
D. 105 kg m/s

Q.35 If force is doubled by keeping mass constant then acceleration will be
A. Double
B. Halved
C. Quadruple
D. 3 times

Q.36 Newton's 3rd law is derived from
A. Newton's 1st law
B. Newton's 2nd law
C. both
D. none

Q.37 Force exerted by the wall on the water will be
A. F = mv/t
B. F= - mv/t
C. Both a and b
D. None

Q.38 If car and Truck move with same velocity and we Applied same force on both which body comes rest first
A. Car
B. Truck
C. Both
D. None

Q.39 If the maximum horizontal range is 40m then what will be the height attained by the projectile
A. 100m
B. 300m
C. 400m
D. 800m

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Q.40 According to 2nd law of motion, which is correct?
A. acceleration is directly related to mass
B. acceleration is inversely related to force
C. acceleration is not related to mass
D. none of these

Q.41 Car weigh of 1000 has velocity 50 km per hour If mass of 250 is placed in this then velocity become
A. 250
B. 50
C. 100
D. 150

Q.42 Dimension of momentum is same as
A. Impulse
B. Power
C. Planks constant
D. All

Q.43 Displacement time graph slope gives us unit of
A. m/sec
B. m/sec^2
C. sec
D. m

Q.44 Kg m/s^2 is equal to
A. Force
B. Momentum
C. Both
D. None

Q.45 In elastic collision which of the following is constant
A. Momentum
B. Velocity
C. Force
D. All

Q.46 Kinetic friction always than static friction
A. More
B. Less
C. Equal
D. None

Q.47 Momentum is the product of
A. Mass and velocity
B. Mass and force
C. Velocity and force
D. Force and displacement

Q.48 The momentum of particle changes when
A. Energy is changed
B. Force is applied
C. both
D. None

Q.49 The speed of object in particular direction is called
A. Velocity
B. acceleration
C. force
D. momentum

Q.50 The acceleration time graph for projectile motion will be
A. Parabola
B. Nonlinear
C. Straight line
D. inclined

Q.51 A mass accelerate uniformly when resultant force acting on it is
A. Zero
B. Constant but not zero
C. Increasing uniformly with respect to time
D. Both a & b

Q.52 Which law of motion define force?
A. 1st Law
B. 2nd Law
C. 3rd Law
D. All of these

Q.53 If Velocity time graph shape is parallel to Y-axis the acceleration
A. maximum
B. 0
C. infinity
D. minimum

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Q.54 Body moves from rest with a constant acceleration of 5. It a instantaneous speed at the end of 10 seconds is:

A. 0.5
B. 2
C. 50
D. 5

Q.55 A train of length 200m is crossing a bridge 400m length at speed of 36kmh what is the totally time by train cross the bridge

A. 60s
B. 45s
C. 120s
D. 36s

Q.56 A hunter aiming a bird in a tree should aim

A. a little below the bird
B. a little above the
C. exactly at the bird
D. very high

Q.57 Horizontal component of a bouncing ball is

A. affected by gravity
B. unaffected by gravity
C. affected by weight
D. affected by contact force

Q.58 A ball is dropped from a height 10m. The ball is embedded in sand 1m and stops, then

A. Only momentum remains conserved
B. Only kinetic energy remains conserved
C. Both momentum and K.E are conserved
D. Neither K.E nor momentum is conserved

Q.59 Which of the following is momentum closely related to?

A. Impulse
B. Power
C. Force
D. Kinetic energy

Q.60 An object will possess uniform motion as long as the

A. resultant force acting on it is zero
B. resultant force acting on it begins to decrease
C. resultant force is right angles to its rotation
D. resultant force on acting on it increases continuously

Q.61 In an elastic collision of two particles the following is conserved

A. Speed of each particle
B. Kinetic energy of each particle
C. Total kinetic energy of both the particles
D. Momentum of each particle

Q.62 The displacement is a:_____

A. Vector quantity
B. Scalar quantity
C. Neither vector nor scalar quantity
D. Dimensionless quantity

Q.63 Projectile motion has _____ acceleration at each point of trajectory

A. Variable
B. Constant
C. zero
D. None of these

Q.64 A projectile is launched with vertical Kinetic energy K at angle θ then its variation with vertical displacement Y

A. Parabolic
B. periodic
C. hyperbolic trajectory
D. linear

Q.65 Projectile when launched at 90 degrees with respect to horizontal then its trajectory is

A. Parabolic
B. Periodic
C. hyperbolic trajectory
D. linear

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Q.66 In which situation, distance is three times than its displacement?
A. object moves and come back to its initial position
B. object moves 20 m towards east and 10 m towards west
C. object moves 20 m towards east and 10 m towards south
D. object moves 20 m towards north and 10 m towards west

Q.67 SI unit of acceleration is:_____
A. m
B. m^2
C. m/s
D. m/s^2

Q.68 If we are standing in bus and when conductors apply a brake then we feel
A. pseudo force pushes backwards
B. pseudo force pushes forwards
C. real force pushes backwards
D. real force pushes forwards

Q.69 Horizontal velocity vs time graph for a projectile motion is
A. varies linearly
B. follows a parabolic path
C. is constant
D. is constant

Q.70 Acceleration of object which starts rest to reach 20 m/s in 10 sec is
A. $2m/s^2$
B. $10m/s^2$
C. $1\ m/s^2$
D. $2m.s^2$

Q.71 If a projectile is launched with 3m/s velocity at 60-degree angle then at highest point its horizontal velocity is
A. 3 m/s
B. 2m/s
C. 1.5 m/s
D. 1.8 m/s

Q.72 If velocity varies with time in quadratic manner, then acceleration
A. Constant
B. Zero
C. linearly varying
D. varies as t^3

Q.73 Vector is quantity which
A. has direction
B. has magnitude
C. follow rules of vector addition
D. both direction and magnitude

Q.74 The magnitude of the displacement is: _____
A. size of object A
B. straight line distance between the initial position and the final position of the body
C. size of object B
D. any distance between the initial position and the final position of the body

Q.75 The net force acting in an inertial frame is
A. positive
B. negative
C. zero
D. none of these

Q.76 An object moves 20 m in 5 sec. What is the gradient of the displacement-time graph?
A. 25
B. 15
C. 4
D. 1/4

Q.77 Circular motion of a particle while attached to a string centripetal acceleration is provided by
A. Tension in string
B. gravitational force
C. Normal force
D. none of these

Q.78 Passengers sitting in a stationary car experience a jerk when the car suddenly starts. This is due to
A. inertia of motion
B. inertia of rest
C. inertia of turning
D. inertia of acceleration

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Q.79 For a linear relationship between displacement and time we get d-t graph as
A. straight line passing through origin
B. straight line parallel to t- axis
C. quadratic relationship
D. cubic relationship

Q.80 At every point of trajectory of projectile which of the following quantities is always zero
A. horizontal velocity
B. total velocity
C. vertical acceleration
D. horizontal acceleration

Q.81 Which unit is used in the measurement of Displacement?
A. m
B. m/s
C. 1/s
D. N

Q.82 Acceleration of a moving car when brakes are applied is
A. negative
B. zero
C. positive
D. infinite

Q.83 A horizontal line in displacement-time graph represents:_____
A. uniform accelerated motion
B. motion with constant velocity
C. motion with constant speed
D. body at rest

Q.84 A motion with uniform negative acceleration can be represented on displacement-time graph by:
A. a horizontal line
B. a curve line with decreasing gradient
C. a straight line with constant gradient
D. a curve line with increasing gradient

Q.85 When an object moves in a straight line then:____
A. its displacement is equal to distance
B. its displacement is greater than distance
C. its displacement is less than distance
D. we cannot measure displacement

Q.86 If one body is at rest then if we try to move it then it will resist by
A. inertia of motion
B. inertia of rest
C. inertia of turning
D. inertia of acceleration

Q.87 If the velocity varies linearly with time then acceleration is called
A. nonuniform
B. discrete
C. instantaneous
D. uniform

Q.88 Mass m_1 has a velocity of 0m/s and mass m_2 has a velocity of 5 m/s. Mass $m_1 > m_2$. Which one has larger inertia?
A. m_2
B. m_1
C. both m_1 and m_2
D. not enough information

Q.89 Consider a car is travelling for one hour. In which of the following cases the average velocity is zero?
A. car travels 20 km due east
B. car travels 60 km due east, then turns around and travels 40 km due west
C. car travels 70 km due east
D. car travels 30 km due west, then turns around and travels 30 km due east

Q.90 Newton's second law states that the rate of change of _____ is equal to external force
A. velocity
B. Mass
C. momentum
D. position

Q.91 Velocity of an object changes from 20 m/s to 50 m/s in 5 sec. What is the acceleration of the object?
A. 6 m/s
B. 6 m/s^2
C. 10 m/s
D. 10 m/s^2

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Q.92 For a car which applies brakes from 10 m/s to stop the car in 10 sec its acceleration is
A. 1 m/s^2
B. 2m/s^2
C. -1 m/s^2
D. -2 m/s^2

Q.93 What is the FPS unit of displacement
A. kilometer
B. meter
C. Foot
D. pound

Q.94 Instantaneous velocity is defined as
A. dx/dt
B. $\Delta x/\Delta t$
C. $\Delta x.\Delta t$
D. $\Delta v/\Delta t$

Q.95 Which of the given motion is a type of 2D motion
A. Circular
B. Pendulum motion
C. Projectile motion
D. All of these

Q.96 Displacement of object with respect a constant moving(v) frame in same direction is
A. x-vt
B. x+vt
C. x
D. $x+vt+at^2$

Q.97 If an object moves with constant velocity then its acceleration is:
A. zero
B. nonzero
C. infinite
D. none of these

Q.98 When a stone is thrown horizontally with 2 m/s from a building of height 5 m then just before hitting ground its acceleration is:
A. 12 m/s^2
B. 13 m/s^2
C. 9.8 m/s^2
D. 7.6 m/s^2

99 The displacement between A and B is defined as:
A. change in position of an object from a to b
B. any distance between two points
C. longest distance from a to b
D. longest distance between two points

0 If a car starts from rest and reaches 20 m/s velocity in 10 m distance then acceleration is:
A. 20 m/s^2
B. 10 m/s^2
C. 5 m/s^2
D. 2m/s^2

Q.101 The distance and displacement can be equal if:
A. an object moves on a circular path
B. an object oscillates
C. an object moves in a straight line
D. an object moves on a parabolic path

Q.102 Instantaneous velocity is defined at
A. particular displacement
B. instant acceleration
C. instant time
D. average time

Q.103 Consider a car is travelling for one hour. In which of the following cases the average velocity is zero?
A. car travels 20 km due east
B. car travels 60 km due east, then turns around and travels 40 km due west
C. car travels 70 km due east
D. car travels 30 km due west, then turns around and travels 30 km due east

04 If an object moves with constant velocity then its acceleration is:
A. zero
B. nonzero
C. infinite
D. none of these

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Q.105 Acceleration of a moving train when it start its motion is:
A. negative
B. zero
C. positive
D. infinite

Q.106 If the velocity of particle is varying linearly with time then shape of d-t curve would be:
A. linear
B. quadratic
C. cubic
D. decreasing linearly

Q.107 If a car is travelling eastward and slowing down, what is the direction of acceleration?
A. eastward
B. westward
C. neither eastward nor westward
D. we cannot answer with this data

Q.108 Vertical velocity vs time graph for a projectile motion
A. varies linearly
B. follows a parabolic path
C. is constant
D. is nonlinear

Q.109 Consider a car is travelling for one hour. Which of the following cases has the greatest average velocity in east-direction?
A. car travels 20 km due east
B. car travels 60 km due east, then turns around and travels 40 km due west
C. car travels 70 km due east
D. car travels 30 km due west, then turns around and travels 30 km due east

Q.110 The displacement has:
A. magnitude only
B. direction only
C. magnitude and direction
D. no unit

Q.111 An object is moving at constant speed, which of the following is always true:
A. distance is greater than displacement
B. distance is lesser than displacement
C. distance is equal to displacement
D. we cannot answer

Q.112 Projectile motion of object on earth is always:
A. linear
B. parabolic
C. cubic
D. inverse

Q.113 When an object moves on a circular path, then:
A. its displacement is constant
B. its displacement changes due to change in distance
C. its displacement changes due to change in direction of motion
D. its displacement is always zero

Q.114 1 light year distance is:
A. distance travelled by earth in one year
B. distance travelled by star in one year
C. distance travelled by light in one year
D. distance travelled by light in one galactic year

Q.115 Displacement is a:
A. tensor
B. vector
C. scalar
D. None of these

Q.116 Average speed of a object after a completing a circle of 5 m radius in 5 seconds
A. 2π
B. π
C. zero
D. 10π

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Q.117 Centripetal acceleration always acts_____ the center
A. away
B. towards
C. normally
D. tangentially

Q.118 Pseudo forces arises in:
A. inertial frames
B. constant moving frames
C. rest frame of reference
D. accelerating frame of reference

Q.119 If we are moving with constant velocity frame then the inertial state is same as:
A. rest frame
B. accelerating frame
C. non-inertial frame
D. All of these

Q.120 A car travels 30 m toward east, then it takes turn and travels 40 m towards north. It takes 50 seconds. Its average velocity is:
A. 7/5 m/s
B. 1 m/s
C. 1/5 m/s
D. 5 m/s

Q.121 Average velocity of a object after a completing a circle of 5 m radius in 5 seconds:
A. 2π
B. π
C. zero
D. 10π

Q.122 In which case, the object is speeding up:
A. velocity is positive acceleration is negative
B. velocity is negative acceleration is negative
C. velocity is negative acceleration is zero
D. velocity is negative acceleration is positive

Q.123 Acceleration describes how:
A. speed is changing
B. the speed and force are changing
C. the speed and direction of motion are changing
D. the direction of motion are changing

Q.124 If we apply 100 N force on 10 kg box then its acceleration is:
A. 20 m/s2
B. 5 m/s2
C. 10 m/s2
D. 40 m/s2

Q.125 Consider a displacement-time graph of an object moving along x-axis. Then negative gradient of the graph represents:
A. velocity in x-direction
B. velocity in negative x-direction
C. acceleration in x-direction
D. acceleration in negative x-direction

Q.126 Speed is a
A. tensor
B. vector
C. scalar
D. None of these

Q.127 Displacement of an object in moving around a complete circle is
A. $2\pi r$
B. 2r
C. πr
D. zero

Q.128 Velocity is a
A. tensor
B. vector
C. scalar
D. None of these

Q.129 A straight moving bus takes a sharp right turn. What will happen to the passengers sitting inside the bus?
A. They will tilt rightwards
B. They will tilt leftwards
C. They will stay the way they were
D. They will start jumping

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Q.130 People sitting in a moving bus experience a jerk when the bus stops. This is due to__
A. inertia of motion
B. inertia of rest
C. inertia of turning
D. inertia of acceleration

Q.131 We can calculate velocity of an object from displacement-time graph by: _____
A. calculating area under the graph
B. finding gradient of displacement-time graph
C. calculating area above the graph
D. finding the length of the graph

Q.132 A motion with increasing velocity can be represented on displacement-time graph by:
A. a horizontal line
B. a curve line with decreasing gradient
C. a straight line with constant gradient
D. a curve line with increasing gradient

Q.133 The acceleration of a moving object can be defined as:
A. rate of change in speed
B. rate of change in velocity
C. rate of change in distance
D. rate of change in displacement

Q.134 Acceleration of an object is defined as the rate of change of
A. displacement
B. time
C. velocity
D. distance

Q.135 At the highest point of trajectory which of the following quantities is zero
A. horizontal velocity
B. total velocity
C. vertical velocity
D. none of these

Q.136 Rockets use thrust forces which produces
A. constant acceleration
B. variable acceleration
C. constant velocity
D. linearly varying velocity

Q.137 Which of the following vector is perpendicular to the vector A = 2i + 3j + 4k
A. i + j + k
B. 4i + 3j - 2k
C. i - 3j + k
D. i + 2j - 2k

Q.138 Rate of change in displacement is known as:
A. speed
B. velocity
C. acceleration
D. momentum

Q.139 Acceleration is always _____ for a freely falling body
A. positive
B. negative
C. zero
D. none of these

Q.140 The value of acceleration due to gravity on moon is_____ of earth
A. 1/4 th
B. 1/10th
C. $2/3^{rd}$
D. $1/6^{th}$

Q.141 Inertia refers to tendency of object to
A. beat rest
B. be at constant motion
C. remain in the same state as previous
D. be at accelerating motion

Q.142 Displacement and distance moved by an object in a straight path is
A. zero
B. same
C. different
D. not enough info

Q.143 Acceleration of a particle at any moment from a-t graph we calculate is called _____ acceleration
A. average
B. instantaneous
C. periodic
D. linear

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Q.144 average velocity is defined as

A. displacement/time
B. distance/time
C. distance*time
D. displacement*time

Q.145 Acceleration of rolling object is zero at _____ point of hill:

A. highest
B. lowest
C. middle
D. none of these

Q.146 Acceleration due to gravity near earth is

A. nonuniform
B. uniform
C. decreasing with distance
D. increasing with time

Q.147 Newton's first law applicable only in

A. accelerating frames
B. inertial frame
C. both A and B
D. non-inertial frames

Q.148 The value of acceleration due to gravity on earth is

A. 5 m/s^2
B. 6m/s^2
C. 15m/s^2
D. 9.8 m/s^2

Q.149 Projectile motion is not dependent on the _____ of particle

A. initial velocity
B. mass
C. launch angle
D. acceleration

Q.150 Acceleration of earth around sun in its orbit is always

A. tangential
B. radial
C. zero
D. none of these

Q.151 If a squash ball comes back to its starting point after bouncing off the wall several times, then:

A. its total displacement is zero but its average velocity is non-zero
B. its total displacement is non-zero but its average velocity is zero
C. both its total displacement and its average velocity is non-zero
D. its total displacement is zero and so also is its average velocity

Q.152 An object moves 20 m towards east and then 10 m towards west, in 5 seC. What is its average velocity and average speed?

A. speed = 6 m/s velocity = 2 m/s
B. speed = 6 m/s velocity = 6 m/s
C. speed = 2 m/s velocity = 2 m/s
D. speed = 2 m/s velocity = 6 m/s

Q.153 The acceleration is a:

A. vector quantity
B. scalar quantity
C. dimensionless quantity
D. none of these

Q.154 If the velocity of an object is increasing with time then acceleration is

A. negative
B. positive
C. zero
D. none of the above

Q.155 If displacement-time graph is a curve, which of the following is correct:

A. area under graph represent displacement
B. gradient of the graph is constant
C. gradient of the tangent of graph represents acceleration
D. gradient of the tangent of graph represents velocity

Q.156 Unit of instantaneous velocity is

A. m/s^2
B. m/s
C. m
D. 1/s

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Q.157 If an object moves with constant speed then its acceleration always is

A. zero
B. nonzero
C. infinite
D. none of these

Q.158 Accelerating frame of reference which has constant acceleration is

A. constant moving car
B. moving train
C. freely falling body on earth
D. none of these

Q.159 If a car moves from 15 m/s to 5 m/s in 10 sec then average acceleration is

A. 1 m/s2
B. 2m/s2
C. 5 m/s2
D. 10m/s2

Q.160 Rate of change of displacement with respect to time is

A. acceleration
B. velocity
C. speed
D. power

Q.161 When an object moves on a circular path and come back to its initial position, then:

A. only its distance is zero
B. only its displacement is zero
C. neither distance nor displacement is zero
D. both distance and displacement is zero

Q.162 A bullet moving with a speed of 100 ms–1 can just penetrate two planks of equal thickness. Then, the number of such planks penetrated by the same bullet when the speed is doubled will be:

A. 6
B. 10
C. 4
D. 8

ANSWER KEY

1	B	21	A	41	C	61	C	81	A	101	C	121	C	141	C	161	B
2	A	22	B	42	A	62	A	82	A	102	C	122	B	142	B	162	D
3	B	23	B	43	A	63	B	83	D	103	D	123	C	143	B		
4	B	24	B	44	A	64	D	84	B	104	A	124	C	144	A		
5	B	25	C	45	A	65	D	85	A	105	C	125	B	145	A		
6	B	26	B	46	B	66	B	86	B	106	A	126	C	146	B		
7	D	27	A	47	A	67	D	87	D	107	B	127	D	147	B		
8	C	28	D	48	C	68	A	88	B	108	A	128	B	148	D		
9	A	29	A	49	A	69	C	89	D	109	C	129	B	149	B		
10	D	30	B	50	C	70	A	90	C	110	C	130	A	150	A		
11	D	31	C	51	B	71	C	91	B	111	D	131	B	151	D		
12	B	32	A	52	A	72	C	92	C	112	B	132	D	152	A		
13	B	33	A	53	C	73	C	93	C	113	C	133	B	153	A		
14	A	34	A	54	C	74	B	94	A	114	C	134	C	154	B		
15	C	35	B	55	A	75	C	95	D	115	B	135	C	155	D		
16	B	36	B	56	B	76	C	96	A	116	A	136	B	156	B		
17	D	37	A	57	B	77	A	97	A	117	B	137	D	157	B		
18	B	38	A	58	A	78	B	98	C	118	D	138	B	158	C		
19	A	39	D	59	A	79	A	99	A	119	A	139	A	159	A		
20	A	40	C	60	A	80	D	100	A	120	B	140	D	160	B		

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2 TOPIC WORK AND ENERGY

PRACTICE EXERCISE

Q.1 Unit of Energy

A. joule
B. kilo joule
C. calorie
D. All of these

Q.2 Work done will be maximum if the angle between the force F and displacement d is

A. 45°
B. 90°
C. 180°
D. 0°

Q.3 A field in which the work is done in a moving a body along a closed path is zero is called

A. Electric field
B. Conservative field
C. Electromagnetic field
D. Gravitational field

Q.4 When a force is parallel to the direction of motion of the body, then work done on the body is

A. Zero
B. Minimum
C. Infinity
D. Maximum

Q.5 If a body a mass of 2 kg is raised vertically through 2m, then the work done will be

A. 38.2 J
B. 392.1 J
C. 39.2 J
D. 3.92 J

Q.6 The relation between horsepower and watt is

A. 1 hp = 546 watts
B. 1 hp = 746 watts
C. 1 hp = 1000 watts
D. 1 hp = 946 watts

Q.7 The slope of the work time graph is equal to

A. Displacement
B. Acceleration
C. Power
D. Energy

Q.8 The consumption of energy by a 60-watt bulb in 2 sec is

A. 120 J
B. 60 J
C. 30 J
D. 0.02 J

Q.9 A man lifts vertically a weight of 40kg through 1m in 10s; while a child lifts vertically a weight of 10kg through a distance of 1m in 1s. What will be correct inference?

A. Man does more work than a child
B. A child does more work than a man
C. Both do the same amount of work
D. None is correct

Q.10 The area under the force displacement graph represents

A. Area
B. Work done
C. Power
D. None of these

Q.11 When can one say that work is done on the body

A. When the body experiences force
B. When there is an increase in energy because of mechanical influence
C. When the body moves a certain distance
D. None of the above

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Q.12 The work done on an object does not depend upon the
A. displacement
B. force applied
C. angle between force and displacement
D. initial velocity of the object

Q.13 A machine does 2500 J of work in 1 min. What is the power developed by the machine?
A. 21 W
B. 42 W
C. 150 W
D. 2500 W

Q.14 A moving car possesses
A. sound energy
B. mechanical energy
C. heat energy
D. chemical energy

Q.15 The interconversion of matter and energy is predicted by
A. Newton
B. Einstein
C. Jobst Burgi
D. Abu Jafar

Q.16 A bus weighing 12kN has speed of 20 ms^{-1}. Its kinetic energy is
A. 210 kJ
B. 230 kJ
C. 240 kJ
D. 250 kJ

Q.17 According to the law of conservation of energy
A. Energy can't be destroyed
B. Energy can't be created
C. Energy can be transformed from one from to another
D. All of the above

Q.18 kWh is the unit of
A. Force
B. Power
C. Time
D. Energy

Q.19 An object that has potential energy has this energy because of its
A. Speed
B. Acceleration.
C. Momentum
D. Location

Q.20 Power of an agent is
A. the rate of generation of energy
B. the rate of transfer of energy
C. the rate of consumption of energy
D. all of these

Q.21 Unit of energy
A. Joule
B. Kilojoule
C. Calorie
D. All of these

Q.22 Power delivered by the water pump up lifting
A. P=mgh/t
B. P=gh/t
C. P=mh/t
D. None

Q.23 2kg mass is uplifted by the machine through the height of 200m for 10 sec calculate power deliver to the load. ($g = 10m/s^2$)
A. 40W
B. 400W
C. 440W
D. 200W

Q.24 Light body A and heavy body B have equal K. E of translation. Then
A. A has lager momentum than B
B. B has larger momentum Than A
C. A and B have same
D. None

Q.25 Energy required to accelerate a car from 10ms to 20m/s compared with that required to accelerate is from 0 to 10 is
A. Twice
B. four times
C. three time
D. same

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Q.26 Kinetic energy of a body is 1000j it's momentum decreases by 50% then kinetic energy of that body becomes

A. 500J
B. 750J
C. 1250J
D. 250J

Q.27 Work done will be maximum. If the angle between the force F and displacement is

A. 45°
B. 90°
C. 150°
D. 0°

Q.28 Which of the following have same dimension

A. Work and Torque
B. Energy and Work
C. Power and Force
D. Power and Torque

Q.29 If momentum is increased by 13% than K.E increase by

A. 37%
B. 2.27%
C. 3.47%
D. None

Q.30 The slope of the work time graph is equal to

A. Displacement
B. Acceleration
C. Power
D. Energy

Q.31 If the velocity is doubled then

A. Momentum increases 4 times and K.E increases 2 times
B. Momentum and K.E. remain same
C. Momentum increases 2 times and K.E increases constant
D. Momentum increases 2 times and K.E increases 4 time

Q.32 What is the average power required to lift a mass of 100kg to a height of 50m in 50 seconds?

A. 980
B. 50
C. 100
D. 5000

Q.33 When can one say that work is done on the body

A. When there is an increase in energy because of mechanical influence
B. When the body experiences force
C. When the body moves a certain distance
D. none of these

Q.34 In case of negative work the angle between the force and displacement is

A. 180°
B. 90°
C. 45°
D. 0°

Q.35 A car travels with a constant speed of 15 m/s. The car's engine produces a 4000 N pushing force in order to keep the speed constant. How much power is developed by the engine?

A. 60000 W
B. 600 W
C. 6000 W
D. 60 W

Q.36 If a pump can lift 200 kg of water through a height of 6 m in 10 seconds, then its power is

A. 1200 watts
B. 1300 watts
C. 1000 watts
D. 1100 watts

Q.37 As the rain falls, the potential energy changes to

A. kinetic energy
B. chemical energy
C. thermal energy
D. nuclear energy

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Q.38 If the linear momentum of the object is increased by 0.1%, then the kinetic energy is increased by

A. 0.1 %
B. 0.2%
C. 0.4%
D. 0.01%

Q.39 Work done by conservative force is

A. Reversible
B. Non reversible
C. Can be both
D. None of them

Q.40 A particle of mass 2 kg is in circular motion with velocity 5 m/s ², radius of path is 2 m what will be the work done by the centrifugal force in half cycle

A. 100 J
B. -100 J
C. 0
D. 50 J

Q.41 A force F = (0.5x +10) N acts on a particle, calculate the work done by the force in displacing particle from x=0 to x=2 m

A. 20 J
B. 21 J
C. 22 J
D. 23 J

Q.42 A constant force of F= (i- 2j – 3k) causes a displacement d = (2i – 5j + k), what will be the net work done if F in N and displacement is in meter

A. 15 J
B. 9 J
C. 8 J
D. 18 J

Q.43 A gardener moves a lawn roller through a distance of 50 m. Applied force is 50 N inclined at 60 degrees of direction of motion what will be the work done by the gardener

A. 1250 J
B. 2500 J
C. -1250 J
D. -2500 J

Q.44 What is kinetic energy of body 5kg and momentum 15 kg.m/sec

A. 30 J
B. 55 J
C. 50 J
D. 22.5 J

Q.45 Work done by non-conservative force is

A. Reversible
B. Non-Reversible
C. can be both
D. none of them

Q.46 Two forces of F1 =5 N and F2= 15 N are working on a body in opposite direction. If body displaced by 5 m in direction of net force, what will be the work done by F1

A. 25 J
B. -25 J
C. 50 J
D. 75 J

Q.47 When a spring is stretched, work done by stretching force is

A. positive
B. negative
C. zero
D. none of these

Q.48 KE of body is increased by 44 %, what is the percentage increase in the momentum

A. 10 %
B. 20 %
C. 30 %
D. 44 %

Q.49 Work done on a ceiling fan by gravity is

A. maximum
B. zero
C. minimum
D. infinity

Q.50 A body of mass 10 kg is travelling with uniform speed of 5 m/s. Its kinetic energy is

A. 125 J
B. 250 J
C. 500 J
D. 255 J

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Q.51 When a body moves vertically upward, the work done will be
A. positive
B. zero
C. negative
D. none of these

Q.52 A body moves a distance of 10 m along a straight line under the action of 5 N force. If work done is 25 J, then angle between the force and direction of motion of the body will be:
A. 75°
B. 60°
C. 45°
D. 30°

Q.53 A force $F = 7 - 2x + 3x^2$ is applied on 2kg body, work done to displace the body from x =0 to x=5 m
A. 70 J
B. 200 J
C. 35 J
D. 135 J

Q.54 Work done by friction force is always
A. Negative
B. positive
C. zero
D. maybe positive, maybe negative

Q.55 When a man walks on a surface horizontally with constant velocity, work done by
A. friction is zero
B. contact force is zero
C. gravity is zero
D. all of these

Q.56 When brakes are applied to moving vehicle, the work done by the braking system is
A. positive
B. negative
C. zero
D. none of these

Q.57 A horse is pulling a cart of mass 50 kg in the horizontal direction, if the distance travelled is 20m then what will be the work done by normal force
A. 1000 J
B. –1000 J
C. 0
D. 500 J.

Q.58 Work done by a conservative force in a complete cycle is
A. Zero
B. more than zero
C. less than zero
D. none of these

Q.59 Two forces of F_1 =5 N and F_2= 15 N are working on a body in opposite direction. If body displaced by 5 m in direction of net force, what will be the work done by F_{net}
A. 25 J
B. -75 J
C. 75 J
D. 50 J

Q.60 A 4kg eagle picks up a 75g snake and raises it 2.5 m from the ground to a branch. What is the work done to raise the bird's own Centre of mass to the branch? (Assume g = 10 m/s ^{2})
A. 100 J
B. 1.875 J
C. 18.75 J
D. 187.5 J

Q.61 If force is F = 4i – 2j and displacement is d= 3i + 4j, the work done will be
A. 4 J
B. 8 J
C. 2 J
D. 12 J

Q.62 A man pushes a wall and failed to displace it, he does
A. Negative work
B. positive work but not maximum
C. No work at all
D. maximum work

Q.63 Consider a drop of water of mass 1 gm falling from a height of 1 km. It hits the ground with a speed of 50 m/s, take g = 10 m/s ^{2}. the work done by resistive force of air is
A. -8.25 J
B. -8.75 J
C. 8.75 J
D. 8.5 J

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Q.64 When work done by force of gravity is negative (only gravity is acting)
A. KE decreases
B. PE increases
C. both (A) and (B)
D. none of these

Q.65 If the speed of the body is doubled, then
A. KE doubled
B. PE doubled
C. momentum doubled
D. acceleration is doubled

Q.66 ____work on arbitrary system means a transfer of energy to the system
A. Positive
B. negative
C. Can be positive or negative
D. None of the above

Q.67 A stone of mass 1 kg dropped from a height of 10m with the speed of 14 m/s, approximate kinetic energy is
A. 10 J
B. 0 J
C. 100 J
D. 1000 J

Q.68 A man standing in a bus and pushing the wall of the bus in direction of motion work done by the man is
A. positive
B. zero
C. negative
D. none of these

Q.69 Kinetic energy of the body is increased by the 21 %. what is the percentage change in the linear momentum of the body?
A. 0.21
B. 0.22
C. 0.11
D. 10

Q.70 Work done can be calculated by taking:
A. dot product of force and displacement
B. cross product of force and displacement
C. both cross and dot product
D. none of these

Q.71 A body of mass 10 kg is moved parallel to the ground, through a distance of 2 m. The work done against gravitational force is:
A. zero
B. 196 J
C. -196 J
D. 48 J

Q.72 A constant force of F= (i- 2j - 3k) causes a displacement d = (2i - 5j + k), what will be the net work done if F in N and displacement is in meter
A. 15 J
B. 9 J
C. 8 J
D. 18 J

Q.73 A constant force of 10 N is applied on a body which causes displacement of 12 cm what will be the work done:
A. 120 J
B. 12 J
C. 1.2 J
D. 18 J

Q.74 Work done by friction
A. can be zero
B. can be positive
C. can be negative
D. all of these

Q.75 If a porter is carrying a load and waiting for arrival of train then work done by the porter is:
A. positive
B. zero
C. negative
D. none of these

Q.76 A cyclist come to skidding stop in 10 m, the force on the cycle due to the road is 200 N and opposite to the motion. how much work does the road do on the cycle:
A. 2000 J
B. -2000 J
C. 0
D. 200 J

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Q.77 Moon is revolving around the earth, work done by the earth on the moon is:
A. positive
B. zero
C. negative
D. none of these

Q.78 A constant force of 20N is applied in horizontal direction and distance travelled in the direction of force is 5m, then work done is:
A. 200 J
B. 50 J
C. 20 J
D. 100 J

Q.79 A body of mass 2 kg is raised vertically raised by 2m then work will be:
A. 38.2 J
B. 392.1 J
C. 39.2 J
D. 40 J

Q.80 A variable force F = x is applied what will be the work done in moving the particle from X= 0 to 1
A. 2 J
B. 1 J
C. 0.5 J
D. 5 J

Q.81 A bullet of mass 10 g leaves a rifle at an initial velocity of 1000 m/s and strikes earth at the same level with a velocity of 500 m/s. the work in overcoming the resistance of air will be:
A. 500J
B. 5000J
C. 3750J
D. 475J

Q.82 A bullet fired from gun can pierce to a target due to:
A. heat energy
B. mechanical energy
C. acceleration
D. kinetic energy

Q.83 A man move a roller through a distance of 20 m. 10 N of applied force is inclined at 60 degree of direction of motion what will be the work done by the man:
A. 100 J
B. 50 J
C. -100 J
D. -50 J

Q.84 Work is done by the applying force when
A. applied force is variable
B. applied force is perpendicular to the motion
C. applied force generated motion
D. applied force is constant

Q.85 What is the SI unit of work
A. joule
B. newton
C. watt
D. none of these

Q.86 In case of harmonic oscillator total energy remains:
A. variable
B. infinity
C. constant
D. zero

Q.87 In case of simple pendulum total energy remains:
A. variable
B. constant
C. infinity
D. zero

Q.88 A bullet of mass $5x10^{-5}$ has the velocity of 200 m/s, kinetic energy of the bullet is:
A. 100 J
B. 1 J
C. 10 J
D. none of these

Q.89 Which of the following is not a conservative force:
A. friction
B. electric
C. magnetic
D. gravitational

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Q.90 A field in which work done in a moving a body along the close path is zero called:
A. Electric field
B. conservative field
C. magnetic field
D. none of these

Q.91 A spring having spring constant of 10 N/m² is stretched to 5 m, what will be the work done:
A. 250 J
B. 50 J
C. -250 J
D. 125 J

Q.92 An object is displaced from point A (0,1,1) m to point B (1,4,3) m under a constant force F=(i+2j+3k). find the work done by this force in this process
A. 13 J
B. 15 J
C. 0
D. -13 J

Q.93 A man hold a bucket by applying force 10 N, then moves a horizontal distance of 5 m and vertical distance of 10 m, find out the net work done
A. 100 J
B. 150 J
C. 50 J
D. 200 J

Q.94 The K.E. of a body of mass 2kg and momentum of 2Ns is :
A. 1J
B. 2J
C. 3J
D. 4J

Q.95 Two masses 1 g and 4 g are moving with equal kinetic energies. The ratio of the magnitudes of their linear momenta is
A. 4 : 1
B. 1 : 2
C. 0 : 1
D. 1 : 6

Q.96 Work is a
A. vector quantity
B. scalar quantity
C. sometime scalar some time vector
D. none of these

Q.97 Work done is said to be negative if force and displacement are
A. parallel
B. perpendicular
C. anti parallel
D. none of these

Q.98 A constant force of 10N is applied in horizontal direction and distance travelled in the direction of force is 2m,then work done is
A. 50 J
B. 20 J
C. 22 J
D. 10 j

Q.99 Work is said to be done when a body move through certain distance by the action of
A. energy
B. force
C. momentum
D. power

Q.100 Work is said to be done when a body move through certain distance by the action of
A. energy
B. force
C. momentum
D. power

Q.101 A force of F = (1 + y) N is acting in y direction, work done by this force to move the particle from y= 0 to y = 1m
A. 0.5 J
B. 1 J
C. 2 J
D. 1.5 J

Q.102 An object is displaced from point A (2,3,4) m to point B (1,2,3) m under a constant force F=(2i+3j+4k). find the work done by this force in this process
A. 9 J
B. 0
C. -9 J
D. 20 J

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Q.103 Work done by the centripetal force on a body moving in circle is zero because

A. the body moves parallel to F

B. the body move opposite to F

C. the body move right angle to F

D. centripetal and centrifugal balance each other

Q.104 For a particular displacement how is the work done related to time

A. depend on time

B. independent of time

C. both of these

D. none of these

Q.105 At which angle work done is maximum

A. 45 degree

B. 90 degree

C. 0 degree

D. 180 degree

Q.106 When the direction of the force and displacement are opposite, work done is

A. negative

B. positive

C. zero

D. none of these

Q.107 When momentum of body increased by 200 %, its kinetic energy increases by

A. 200 %

B. 300 %

C. 400 %

D. 800 %

Q.108 When a force is parallel to the direction of motion of body, the work done is

A. Zero

B. minimum

C. infinity

D. maximum

Q.109 If a horse pulls a cart, work done by horse is

A. negative

B. zero

C. positive

D. none of these

Q.110 A particle moves from point P(1,2,3) to Q(2,1,4) under the action of a constant force F= (2i + j + k), work done by force is:

A. 2 J

B. 4 J

C. 16 J

D. 8 J

Q.111 If momentum is increased by 20% then K.E. increase by: =

A. 0.44

B. 0.55

C. 0.66

D. 0.77

Q.112 1 joule is equal to

A. 10^4 erg

B. 10^5 erg

C. 10^6 erg

D. 10^7 erg

Q.113 A 4kg eagle picks up a 75g snake and raises it 2.5 m from the ground to a branch. What is the work done by the eagle on the snake? (Assume g = 10 m/s^2)

A.100 J

B.1.875 J

C.18.75 J

D.187.5 J

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Q.114 A stone of 1 kg is thrown upward it reaches a max height of 5 m , work done by the gravity is:

A. 50 J
B. 49 J
C. -49 J
D. 55 J

Q.115 The atmosphere around the earth is held by

A. clouds
B. winds
C. gravity
D. none of these

Q.116 A disc of radius 2 m and mass 100 kg roll on a horizontal surface, its center of mass has speed of 2cm/s, how much work is needed to stop it

A. 1 J
B. 0.02 J
C. 30 J
D. 2 J

Q.117 Work done can be calculated by taking

A. dot product of force and displacement
B. cross product of force and displacement
C. both cross and dot product
D. none of these

Q.118 A force of F = 20 + 10y N is acting in y direction, work done by this force to move the particle from y= 0 to y = 1m

A. 20 J
B. 15 J
C. 5 j
D. 25 J

Q.119 Effect of work is equal to

A. Change in total energy
B. change in kinetic energy
C. change in power
D. none of these

Q.120 If two point charges of charge q_1 and q_2 are placed at distance D. The force between them is proportional to:

A. d
B. d^2
C. 1/d
D. $1/d^2$

Q.121 Which of the following vector is perpendicular to the vector A = 2i + 3j + 4k

A. i + j + k
B. 4i + 3j - 2k
C. i - 3j + k
D. i + 2j - 2k

Q.122 A ball is released from the top of the tower, the ratio of work done by the gravity in first, second and third second of the motion

A. 1 : 2 :3
B. 1 : 4 : 9
C. 1 : 3 : 5
D. 1 : 5 : 3

Q.123 At which angle work done is minimum

A. 45 degree
B. 90 degree
C. 0 degree
D. 180 degree

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Q.124 A force of $F = 20 + 10y$ N is acting in y direction, work done by this force to move the particle from $y = 0$ to $y = 1m$

A. 20 J
B. 15 J
C. 5 j
D. 25 J

Q.125 A constant force $F = 2i + 3j + 4k$ is applied on a body what will be the work done to move a body 5m in z- direction

A. 0
B. 10 J
C. 45 J
D. 20 J

Q.126 1 joule is equal to

A. 10^4 erg
B. 10^5 erg
C. 10^6 erg
D. 10^7 erg

ANSWER KEY

1	D	21	D	41	B	61	A	81	C	101	D	121	D
2	D	22	A	42	B	62	C	82	D	102	C	122	C
3	B	23	B	43	A	63	B	83	A	103	C	123	B
4	D	24	B	44	D	64	B	84	C	104	B	124	D
5	C	25	C	45	B	65	C	85	A	105	C	125	D
6	B	26	B	46	D	66	A	86	C	106	A	126	D
7	C	27	D	47	A	67	A	87	B	107	D		
8	A	28	B	48	B	68	B	88	B	108	D		
9	A	29	D	49	B	69	D	89	A	109	C		
10	B	30	C	50	A	70	A	90	B	110	A		
11	B	31	D	51	C	71	A	91	D	111	A		
12	D	32	A	52	B	72	B	92	A	112	D		
13	B	33	A	53	B	73	C	93	A	113	B		
14	B	34	A	54	A	74	C	94	A	114	C		
15	B	35	A	55	C	75	B	95	B	115	C		
16	C	36	A	56	B	76	B	96	B	116	B		
17	D	37	A	57	C	77	B	97	C	117	A		
18	D	38	B	58	A	78	D	98	B	118	D		
19	D	39	A	59	C	79	C	99	B	119	B		
20	D	40	C	60	B	80	C	100	B	120	D		

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3 ROTATIONAL AND CIRCULAR MOTION

TOPIC PRACTICE EXERCISE

Q.1 Number of revolutions in 720 degrees.
A. 4 revolutions
B. 3 revolutions
C. 2 revolutions
D. 9 revolutions

Q.2 Angular displacement would be used to measure
A. side of triangle
B. length of a line
C. diameter of circle
D. All

Q.3 Centripetal acceleration's direction?
A. towards the center.
B. Away from the center
C. towards the tangent
D. None

Q.4 Angular displacement is equal to linear displacement and arc is
A. circular
B. curved
C. straight line
D. None

Q.5 Car move in circular path due to
A. Centripetal force
B. frictional force
C. gravitational force
D. None

Q.6 Radian is used to measure
A. Small angles
B. large angles
C. Both
D. None

Q.7 When particles move circle acceleration is always
A. Directed towards center
B. Away from center
C. Perpendicular
D. along the tangent

Q.8 Area of circle is represented by
A. Radius
B. Velocity
C. Theta
D. None

Q.9 If earth covers 360 degrees in 24 hours, then how many degrees are in two hours
A. 15°
B. 30°
C. 45°
D. 60°

Q.10 Circumference of circle is
A. πr
B. $2\pi r$
C. $3\pi r$
D. $4\pi r$

Q.11 Radian is used to measure
A. small angle
B. large angle
C. both
D. none

Q.12 Earth completes one revolution in
A. 24 hours
B. 6 months
C. 12 months
D. None

Q.13 Direction of centripetal force is always
A. Parallel
B. Perpendicular
C. Towards the center
D. A way from center

Q.14 Turning effect produced in a car is due to
A. Gravity
B. Friction
C. Both
D. None

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Q.15 The earth rotate 360° in 24hr find its angle in 2
A. 30° B. 40°
C. 60° D. 90°

Q.16 If wheel of aero plane rotates in clockwise direction then the direction of angular acceleration will be?
A. north side B. south side
C. West side D. East side

Q.17 What will be the velocity vector of a particle moving in a circle describing equal angles in equal times
A. Changes in direction B. Remains constant
C. Changes in magnitude D. Changes both in direction and magnitude

Q.18 The angular velocity of a body moving with a constant speed v in a circle of radius r is given by
A. v^2/r B. v^2/r
C. v/r D. r/v

Q.19 A stone tied to a string is rotated in a circle. If the string is cut, the stone flies away from the circle because
A. A centrifugal force acts on the stone B. Of its inertia
C. A centripetal force acts on the stone D. The reaction of the centripetal force

Q.20 A tachometer is a device to measure
A. Gravitational pull B. Speed of rotation
C. Surface tension D. Tension in a spring

Q.21 One radian is equal to
A. 67.3° B. 57.3°
C. 87.3° D. 60°

Q.22 The period of a circular motion is given by
A. $T = \pi v$ B. $T = \pi w$
C. $T = 2\pi r$ D. $T = 2\pi r/v$

Q.23 The circumference subtends an angle
A. π radian B. 2π radian
C. $\pi/2$ radian D. 4π radian

.24 The relation between linear and angular acceleration is
A. $a = \alpha . r$ B. $a = r \times \alpha$
C. $a = \alpha \times r$ D. $r = a \times \alpha$

Q.25 Centripetal force performs
A. Maximum work B. Minimum work
C. Negative work D. No work

Q.26 When a wheel 1 m in diameter makes 30 rev min the linear speed of the point on its rim in ms-1 is
A. 2π B. $\pi/2$
C. π D. 20π

27 If a wheel of radius r turns through an angle of 30° then the distance through which any point on its rim moves is
A. $\pi/3 \times r$ B. $\pi/6 \times r$
C. $V/30 \times r$ D. $\pi / 180 \times r$

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Q.28 The angular speed of seconds hand of a watch in rads^{-1} is
A. π
B. $\pi/2$
C. $\pi/30$
D. $\pi/180$

Q.29 The ratio of the angular speed of the minute hand of a clock to that of its hour hand is
A. 3600 : 1
B. 60 : 1
C. 24 : 1
D. 12 : 1

Q.30 When a body moves with a constant speed along a circle,
A. Its linear velocity remains constant
B. No force acts on it
C. No work is done on it
D. No acceleration is produced is in it

Q.31 In circular motion, the radius vector
A. Changes in magnitude as well as direction
B. Changes in magnitude only
C. Changes in direction but has a fixed magnitude
D. Has constant magnitude and direction

Q.32 Which of these quantities is constant in uniform circular motion?
A. Speed
B. Velocity
C. Acceleration
D. Displacement

Q.33 The angular acceleration is produced by:
A. Momentum
B. Torque
C. Pressure
D. Power

Q.34 A cyclist turns around a curve at 15 miles/hour. If he turns at double the speed, the tendency to overturn is
A. Doubled
B. Quadrupled
C. Halved
D. Unchanged

Q.35 What will be the velocity vector of a particle moving in a circle describing equal angles in equal times
A. Changes in direction
B. Remains constant
C. Changes in magnitude
D. Changes both in direction and magnitude

Q.36 A body moves with a constant speed in a circular path is moving in a circular path with a constant speed. It has
A. Acceleration of constant magnitude
B. Constant velocity
C. Constant acceleration
D. An acceleration which varies with time

Q.37 A motorcyclist going with a constant speed in a circular track has
A. Linear velocity is constant
B. Constant acceleration
C. Angular velocity is constant
D. Constant force

Q.38 When a body moves in a circle, the angle between its linear velocity and angular velocity is always?
A. 180
B. 0
C. 90
D. 45

Q.39 The angular speed of the wheels of a bicycle is 8π radian/sec their period of rotation is:
A. 25 sec
B. 4 sec
C. $\pi/4$ sec
D. 4 sec

Q.40 Determine the angular displacement in radians of 6.5 revolutions.
A. 40.8 radians
B. 4 radians
C. 3 radians
D. 36 radians

Q.41 A body is moving in a circle at constant speed. Which statement is true?
A. The resultant force acts towards the centre of the circle
B. There is no resultant force
C. The resultant force acts away from the centre of the circle
D. none of these

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Q.42 For anti-clockwise rotations direction of angular velocity is
A. positive
B. negative
C. zero
D. infinite

Q.43 Centripetal force acts
A. Outwards
B. Inwards
C. Both of them
D. None of them

Q.44 A body moving along the circumference of a circle completes two revolutions. If the radius of the circular path is R, the total angular displacement covered is?
A. πr
B. $2\pi r$
C. zero
D. 4π

Q.45 The relation between linear and angular acceleration is:
A. $a = \alpha \times r$
B. $\alpha = a \times r$
C. $v = a \times r$
D. $r = \alpha \times v$

Q.46 A car of mass 2000 kg moving in a circular path of radius 10 m at a constant speed of 30m/sec. Find the centripetal force required for this purpose.
A. 1800N
B. 18N
C. 180 kN
D. 18 kN

Q.47 What is 30 degrees in radians?
A. $\pi/3$
B. $\pi/6$
C. $\pi/2$
D. $\pi/4$

Q.48 For constant linear acceleration, angular acceleration and radius are
A. equal
B. inversely related
C. directly related
D. no relation

Q.49 Find angular acceleration when $\Delta\omega$ is 250 rpm and Δt is 5.00 s.
A. 5.24 rad/sec ^{2}
B. 6 rad/sec ^{2}
C. 10 rad/sec ^{2}
D. none of these

Q.50 For an object moving in a circle, the angle between linear velocity and the position vector is:
A. 0 degrees
B. 30 degrees
C. 90 degrees
D. 60 degrees

Q.51 For angular acceleration anti-clockwise rotations means torque is
A. positive
B. negative
C. zero
D. infinite

Q.52 The SI unit of angular acceleration is:
A. rad/s ^{2}
B. rad/s
C. rad.s
D. rad.s ^{2}

Q.53 The number of revolutions in 3π radians is
A. 2
B. 3/2
C. 6
D. 1/6

4 The angular acceleration has units
A. rad/sec^2
B. sec/rad
C. sec ^{2}
D. none of these

Q.55 The angle subtended at the center of a circle by an arc equal to the radius of the circle is
A. One degree
B. One rotation
C. One radian
D. None of these

Q.56 The dimensions of angular velocity are
A. $[LT^{-1}]$
B. $[LT]$
C. $[LT^{-2}]$
D. $[T^{-1}]$

Q.57 A stone is whirled in a vertical circle at the end of the string. When the stone is at the highest position the tension in the string is?
A. Max
B. Zero
C. Equal to the weight of the stone
D. Less than the weight of the stone

Q.58 A body is moving in a circle at constant speed. Which statement is true?
A. It accelerates away from the centre of the circle
B. It accelerates towards the centre of the circle
C. It does not accelerate
D. none of these

Q.59 Angular displacement becomes zero when
A. velocity is zero
B. radial distance is zero
C. any of a or b
D. it can never be zero

Q.60 The units of angular velocity are similar to
A. angular displacement
B. angular acceleration
C. angular frequency
D. none of these

Q.61 What is the measure in radians of the angle A = 330°?
A. $11\pi/3$
B. $7\pi/4$
C. $7\pi/6$
D. $11\pi/6$

Q.62 Which of the following as a spin motion:
A. The motion of the planets round the sun
B. The moment of electron around the nucleus
C. The motion of the moon round the Earth
D. The daily rotation of Earth causing day and night

Q.63 A string 2m long is used to whirl a 200g stone in horizontal circle at a speed of 2m/s. Find tension in string.
A. 0.4 N
B. 1.4 N
C. 2.4 N
D. 3.4 N

Q.64 An object is travelling in a circle at constant speed. Its angular velocity is:
A. changing
B. the same
C. increasing
D. decreasing

Q.65 The value of quantity G in the law of gravitation
A. depend on mass of Earth only
B. depends on radius of Earth only
C. depends on both
D. it independent of mass and radius of Earth

Q.66 What is 1 radian in degrees approximately
A. 57.3 degrees
B. 360 degrees
C. π degrees
D. π^2 degrees

Q.67 Revolution/minute is the unit for
A. Angular displacement
B. Angular momentum
C. Angular acceleration
D. Torque

Q.68 A wheel whose radius is 50 cm rotates at an angular velocity of 6 rad/sec. The linear velocity of the rim of the wheel is closest to
A. 1.5 m/s
B. 4.5 m/s
C. 3.0 m/s
D. 7.5 m/s

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Q.69 If angular velocity increases the _____ also increases
A. time period
B. frequency
C. vibration
D. none of these

Q.70 The angular acceleration is similar to
A. Centripetal acceleration
B. Centrifugal acceleration
C. Both a or b
D. None of these

Q.71 Angular displacement becomes zero when
A. velocity is zero
B. radial distance is zero
C. any of a or b
D. it can never be zero

Q.72 An object is travelling in a circle at constant speed. Its angular velocity is:
A. changing
B. the same
C. increasing
D. decreasing

Q.73 What is 30 degrees in radians?
A. $\pi/3$
B. $\pi/6$
C. $\pi/2$
D. $\pi/4$

Q.74 For constant linear acceleration, angular acceleration and radius are
A. equal
B. inversely related
C. directly related
D. no relation

Q.75 Find angular acceleration when $\Delta\omega$ is 250 rpm and Δt is 5.00 s.
A. 5.24 rad/sec^2
B. 6 rad/sec^2
C. 10 rad/sec^2
D. none of these

Q.76 For an object moving in a circle, the angle between linear velocity and the position vector is:
A. 0 degrees
B. 30 degrees
C. 90 degrees
D. 60 degrees

Q.77 For angular acceleration anti-clockwise rotations means torque is
A. positive
B. negative
C. zero
D. infinite

Q.78 Radiation can cause
A. burning
B. cancer
C. flu
D. all of these

Q.79 The SI unit of angular acceleration is:
A. rad/s^2
B. rad/s
C. rad.s
D. rad.s^2

Q.80 The number of revolutions in 3π radians is
A. 2
B. 3/2
C. 6
D. 1/6

.81 The angular acceleration has units
A. rad/sec
B. sec/rad
C. sec^2
D. none of these

82 One radian means
A. arc length of unit radius is half
B. arc length of unit radius is unity
C. one degree
D. all of these

3 An arc of length equal to the circumference of a circle subtends an angle?
A. π radian
B. πradian
C. $\pi/2$ radian
D. 4π radian

Q.84 The angular displacement is taken to be positive when the rotation is:
A. linear
B. non-linear
C. clockwise
D. anti-clockwise

Q.85 A stone is whirled in a vertical circle at the end of the string. When the stone is at the highest position the tension in the string is?
A. Max
B. Zero
C. Equal to the weight of the stone
D. Less than the weight of the stone

Q.86 The angle between linear and angular velocity can never be:
A. zero
B. 90
C. 270
D. all of these

Q.87 The SI unit of angular momentum is Js. It can also be expressed as:
A. $kg\ ms^{-1}$
B. kgm^2s^{-1}
C. kgm^2s^{-2}
D. kgm^2s^{-1}

Q.88 The shaft of a motor rotates at a constant angular speed of 360rev/min. Angle turned through in 1 sec in radian is?
A. π
B. 3π
C. 6π
D. 12π

Q.89 Determine the linear velocity of a point rotating at an angular velocity of 12 π radians per second at a distance of 8 centimeters from the center of the rotating object.
A. 31.6 cm/s
B. 301.6 cm/s
C. 30.6 cm/s
D. 3016 cm/s

Q.90 If angular frequency is doubled, centripetal force is:
A. twice
B. four times
C. reight times
D. remain same

Q.91 A particle is performing uniform circular motion has constant:
A. velocity
B. acceleration
C. position
D. momentum

Q.92 The force that keeps the body moving in circular motion is:
A. centripetal force
B. centrifugal force
C. force of gravity
D. none of these

Q.93 A car is moving in a circular track of radius 20m at a constant speed of 20m/sec. Find the centripetal acceleration?
A. $20\ m/s^2$
B. $40\ m/s^2$
C. $30\ m/s^2$
D. $10\ m/s^2$

Q.94 The angular speed for the daily rotation of Earth in rad/s^{-1} is?
A. 2π
B. π
C. 4π
D. $7.3 \times 10^{-5}\ rad/s^{-1}$

Q.95 A body is travelling in a circle of radius r at a speed v. Its centripetal acceleration will be:
A. $a = r^2 / v$
B. $a = r / v$
C. $a = v2 / r$
D. $a = v / r$

Q.96 A point on a wheel has a constant angular velocity of 3 rad/s. The angle turned through in 15 seconds is:
A. 45 rad
B. 10π rad
C. 90π rad
D. 5 rad

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Q.97 For clockwise rotations direction of angular velocity is:
A. positive
B. negative
C. zero
D. infinite

Q.98 The frequency of a particle performing circular motion changes from 60 rpm to 180 rpm in 20s, then the angular acceleration is:
A. 0.1π rad/s2
B. 0.2πrad/s2
C. 0.3π rad/s2
D. 0.4π rad/s2

Q.99 If radius of object is doubled the centripetal force acting on same object becomes:
A. double
B. half
C. eight times
D. Remain same

Q.100 The direction associated with angular displacement is given by:
A. Left hand rule
B. Head to tail rule
C. Right hand rule
D. none of these

Q.101 For angular acceleration clockwise rotations means torque is:
A. positive
B. negative
C. zero
D. infinite

Q.102 A car is moving in a circular track of diameter 100m at a constant speed of 40m/sec. Find the centripetal acceleration?
A. 42 m/s2
B. 52 m/s2
C. 32 m/s2
D. 30 m/s2

Q.103 The rate of change of angular velocity is called:
A. angular displacement
B. angular acceleration
C. angular velocity
D. acceleration

Q.104 If radial distance is 2 m and linear acceleration is 2 m the angular acceleration becomes
A. 4
B. 1/4
C. 6
D. 1

Q.105 The velocity along tangent is
A. escape velocity
B. angular velocity
C. linear velocity
D. all of these

Q.106 A body is travelling in a circle of radius r at a constant angular velocity w. Its centripetal acceleration will be:
A. a = rw
B. a = r/w
C. a = wr^2
D. a = rw^2

Q.107 What force provides the centripetal force to planets moving around the sun?
A. coulomb force
B. gravitational force
C. magnetic force
D. none of these

.108 Angular displacement is zero when
A. angle =0
B. v=0
C. r=0
D. both b and c

.109 Which quantity is a scalar quantity
A. angular displacement
B. angular velocity
C. angular acceleration
D. none of these

).110 The angular velocity at a particular instant is called:
A. instantaneous angular speed
B. instantaneous angular velocity
C. angular speed
D. none of these

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Q.111 If a car moves with a uniform speed of $2ms^{-1}$ in a circle of radius 0.4, its angular speed is?
A. 4 $rads^{-1}$
B. 5 $rads^{-1}$
C. 1.6 $rads^{-1}$
D. 2.8 $rads^{-1}$

Q.112 A belt passes over a wheel of radius 25 cm. if a point on the belt has a speed of 5 m/s, the belt is moving with an angular velocity of
A. 3.2 rad/s
B. 0.32 rad/s
C. 20 rad/s
D. 0.032 rad/s

Q.113 The direction of linear velocity of a body moving in a circle is?
A. Along radius away from center
B. Along radius towards center
C. changing with motion
D. Along the tangent

Q.114 The angular acceleration becomes four times when
A. a = 4, r = 2
B. a = 4, r = 4
C. a = 3, r = 0
D. r = 0, a = 0

Q.115 A body performing circular motion with a constant speed has a constant:
A. momentum
B. angular velocity
C. acceleration
D. radius vector

Q.116 What is angular velocity?
A. Change in angular rotation / change in time
B. Change in displacement / change in time
C. Change in speed / change in time
D. Change in acceleration / change in time

Q.117 If radius is four times angular velocity is two times the linear velocity becomes
A. 4
B. 6
C. 8
D. none of these

Q.118 The tires on a bicycle have a diameter of 24 inches. If the tires are turning at a rate of 50 revolutions per minute, determine the bicycle's speed in miles per hour (mph).
A. 9
B. 10
C. 11
D. 12

Q.119 Rockets use thrust forces which produces
A. constant acceleration
B. variable acceleration
C. constant velocity
D. linearly varying velocity

Q.120 The minute hand of a large clock is 3.0 m long. What is its mean angular speed
A. 1.4 x 10-4 rads-1
B. 1.0 x 10-3 rad s-1
C. 5.2 x 10-3 rad s-1
D. 1.7 x 10-3 rad s-1

Q.121 In ground state, high energy photons will be
A. reflected
B. absorbed
C. transmitted
D. any of these

Q.122 The direction of which angular quantity cannot be measured by right hand
A. angular velocity
B. angular acceleration
C. torque
D. all of these

Q.123 Angular displacement is a:
A. vector quantity
B. scalar quantity
C. neither scalar nor vector quantity
D. none of these

Q.124 Find the radius of the circular path if a car is moving with a velocity of 25 m/s and has a centripetal acceleration of 10 m/s^2?
A. 72.3 m/s
B. 30 m/s
C. 62.5 m/s
D. 52.5 m/s

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Q.125 Angle between radius vector and centripetal acceleration is
A. 0°
B. π
C. 2π
D. none of these

Q.126 The SI unit of angular acceleration is:
A. rad/s^2
B. rad/s
C. rad.s
D. rad.s^2

Q.127 The SI Unit of electric charge is?
A. Coulomb
B. Ampere
C. Hertz
D. Volt

Q.128 Radian is equal to ____ degree approximately
A. 57.3°
B. 53.7°
C. 0.017°
D. 0.17°

Q.129 What is the measure in degrees of the angle A = $7\pi/6$?
A. 150
B. 210
C. 100
D. 120

Q.130 A car accelerates from 0 to 72 km/h in 5 seconds. If it has wheels of diameter 50cm, the angular acceleration of its wheels is:
A. 1.6 rad/s2
B. 8 rad/s2
C. 16 rad/s2
D. 160 rad/s2

Q.131 When brakes of a car are applied, angular velocity of a flywheel reduces from 900 cycles/min to 720 cycle/min in 6seC. Angular retardation is:
A. πrads^{-2}
B. 9π rad/s2
C. 8π rad/s2
D. none of these

Q.132 The angular frequency is related to linear frequency by relation
A. inversely
B. directly
C. equally
D. none of these

Q.133 For an object moving in a circle, the angle between linear velocity and the position vector is:
A. 0 degrees
B. 30 degrees
C. 90 degrees
D. 60 degrees

Q.134 If a wheel of radius r turns through an angle of 30°, then the distance through which any point on its rim moves is?
A. $\pi/3r$
B. $\pi r/6$
C. $\pi/30r$
D. $\pi/180r$

Q.135 If r=1m and θ= 1 degree then what is the value of S
A. 0.01745m
B. 1m
C. 2m
D. None

36 The ratio of angular speed of the minute hand of clock to that of its hour hand is :
A. 3600:1
B. 60:1
C. 24:1
D. 12:1

.137 The angle through which a body moves is called:
A. Angular displacement
B. Angular velocity
C. Angular acceleration
D. None of these

).138 The centripetal acceleration is maximum when object moves with r
A. increasing
B. decreasing
C. constant
D. none of these

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Q.139 The value of angular momentum is maximum when Θ is
A. 60 degrees
B. 45 degrees
C. 0 degree
D. 90 degrees

Q.140 Determine the angular velocity if 4.8 revolutions are completed in 4 seconds
A. 9.6 radians/sec
B. 7.5 radians/sec
C. 8 radians/sec
D. 0.96 radians/sec

Q.141 The angular velocity of a minute hand of a clock is?
A. 2 π/60 rads-1
B. π/24 rads-1
C. 2π/3600rads-1
D. π/3600 rads-1

Q.142 The angular displacement of an object after one complete revolution is:
A. 0 radian
B. pi radian
C. 2pi radian
D. (1/3)xpi radian

Q.143 The angular velocity will become equal to linear velocity when r becomes
A. zero
B. negative
C. unity
D. they can never be equal

Q.144 The linear acceleration of a body moving in a circular path is:
A. negative
B. positive
C. constant
D. zero

Q.145 The angular speed of a particle, moving in a circle of radius 20 cm, increases from 2 rad/s to 40rad/s in 9s the ratio of its centripetal acceleration to tangential acceleration at the end of 19 s is,
A. 400:1
B. 14:20
C. 800:1
D. 7:40

Q.146 Angular displacement is a:
A. vector quantity
B. scalar quantity
C. neither scalar nor vector quantity
D. none of these

Q.147 One radian equals to_____ degree
A. 30
B. 60
C. 90
D. none of these

Q.148 An angular velocity of 60 revolutions per minute is the same as:
A. 1/2π rad/s
B. 120π rad/s
C. 30/π rad/s
D. 2πrad/s

Q.149 What is the formula for centripetal acceleration?
A. a = v/t
B. a = v/r
C. a = v^2/r
D. none of these

Q.150 The relation between linear and angular velocity is:
A. v=rxω
B. v = ω x r
C. ω = v x r
D. r = v x ω

Q.151 An electric fan rotating at 3 rev s-1 is switched off. It comes to rest in 18.0 s. Assuming deceleration to be uniform. How many revolutions did it turn before coming to rest?
A. 30 rev
B. 27 rev
C. 40 rev
D. 10 rev

Q.152 Angular velocity is also called as
A. Instantaneous velocity
B. Rotational velocity
C. Tangential velocity
D. Linear velocity

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Q.153 Angular velocity cannot be

A. zero
B. negative
C. infinite
D. linear

Q.154 A mixer grinder rotates clockwise it's angular velocity will be:

A. zero
B. negative
C. uniform but not zero
D. positive

Q.155 Angular velocity of hour arm of a clock in radian/ sec is

A. π/43200
B. π/21600
C. π/30
D. π/1800

Q.156 A body is travelling in a circle of radius r at a constant angular velocity w. Its centripetal acceleration will be:

A. a = rw
B. a = r/w
C. a = wr2
D. a = rw2

Q.157 For anti-clockwise rotations direction of angular velocity is

A. positive
B. negative
C. zero
D. infinite

Q.158 The velocity along tangent is

A. escape velocity
B. angular velocity
C. linear velocity
D. all of these

Q.159 The force that keeps the body moving in circular motion is:

A. centripetal force
B. centrifugal force
C. force of gravity
D. none of these

ANSWER KEY

1	C	21	B	41	A	61	D	81	D	101	B	121	B	141	C
2	D	22	D	42	A	62	D	82	B	102	C	122	B	142	C
3	A	23	B	43	B	63	A	83	B	103	B	123	A	143	C
4	A	24	C	44	D	64	A	84	D	104	D	124	C	144	D
5	A	25	D	45	A	65	D	85	C	105	C	125	B	145	C
6	B	26	B	46	D	66	A	86	A	106	D	126	A	146	A
7	A	27	B	47	B	67	A	87	B	107	B	127	A	147	D
8	A	28	C	48	B	68	C	88	D	108	D	128	A	148	D
9	B	29	D	49	A	69	B	89	B	109	D	129	B	149	C
10	B	30	C	50	C	70	D	90	B	110	B	130	C	150	A
11	B	31	C	51	A	71	C	91	B	111	B	131	A	151	B
12	A	32	A	52	A	72	B	92	A	112	C	132	B	152	B
13	C	33	B	53	B	73	B	93	A	113	D	133	C	153	C
14	B	34	B	54	A	74	B	94	D	114	A	134	B	154	C
15	A	35	A	55	C	75	A	95	C	115	B	135	A	155	A
16	A	36	A	56	D	76	C	96	A	116	A	136	D	156	D
17	A	37	C	57	B	77	A	97	B	117	C	137	A	157	A
18	C	38	C	58	B	78	D	98	B	118	A	138	B	158	C
19	B	39	B	59	C	79	A	99	B	119	B	139	D	159	A
20	B	40	C	60	C	80	B	100	C	120	C	140	B		

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4 TOPIC WAVES

PRACTICE EXERCISE

Q.1 Waves which requires medium, for their propagation
A. Mechanical wave
B. Electromagnetic wave
C. Matter wave
D. All of these

Q.2 When a trough falls over a crest it produces
A. Sound waves
B. Light waves
C. Stationary waves
D. All

Q.3 Doppler's effect shows?
A. Change in frequency due to relative motion between source and observer.
B. Change in amplitude due to relative motion between source and observer.
C. Change in frequency due to motion of source only.
D. Change in frequency due to motion of observer only.

Q.4 Which wave doesn't travel in vacuum?
A. Sound wave
B. Light wave
C. Transverse Wave
D. All of these

Q.5 Sound waves have
A. nodes
B. anti nodes
C. amplitude
D. all

Q.6 Distance Between two Consecutive nodes is
A. Wave length
B. Wave length /2
C. Wave length by 4
D. twice of Wave length

Q.7 Sound waves are
A. Longitudinal
B. Transverse
C. Both
D. None

Q.8 Property related to loudness of sound
A. Frequency
B. Wave
C. Intensity
D. amplitude

Q.9 Stationary waves
A. Move forward
B. Move backwards
C. Don't Move
D. Move in both direction

Q.10 Crest and trough are found in?
A. Transvers wave
B. Longitudinal wave
C. Progressive wave
D. None

Q.11 Water waves are
A. Progressive
B. Transverse Waves
C. Longitudinal waves
D. None

Q.12 Ratio of fundamental frequency of Open Organ pipe to closed organ pipe is
A. 1 : 2
B. 2 : 1
C. 1 : 4
D. 4 : 1

Q.13 Which one required no medium?
A. X-Rays
B. Gamma Rays
C. Beta Rays
D. All

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Q.14 At Crest Amplitude is
A. Maximum
B. Minimum
C. Both
D. None

Q.15 Speed of sound is maximum in
A. solid
B. liquid
C. gas
D. none

Q.16 Which rays need medium to travel
A. x rays
B. gamma rays
C. beta rays
D. all don't need medium

Q.17 Waves produced in explosion are
A. Longitudinal
B. Transverse
C. Shock waves
D. All of them

Q.18 Water waves are
A. Longitudinal
B. Transverse
C. Both
D. Matter waves

Q.19 In interference phenomenon energy is
A. lost
B. gained
C. conserved and redistributed
D. none

Q.20 Doppler effect is
A. change in frequency b/w source and observer
B. change in sound b/w source and observer
C. change in wavelength b/w source and observer
D. None

Q.21 Unit of Time period is
A. 1
B. Hz
C. sec
D. cycle per sec

Q.22 A whistler with velocity 33ms-1 approaches towards a stationary observer with frequency 450Hz what is the apparent frequency heard by the observer:
A. 500
B. 400
C. 430
D. 450

Q.23 Ripple tank is used to study features of
A. Particle
B. Wave
C. Light
D. Solid

Q.24 Waves which deal with fast moving elementary practical
A. Transverse Waves
B. Longitudinal waves
C. Matter waves
D. Periodic waves

Q.25 Which one of the following properties of light does not change with nature of medium
A. frequency of light
B. wavelength
C. speed
D. All of these

Q.26 In which wave the motion of particles is perpendicular to the direction of wave
A. longitude
B. transverse
C. matter
D. None

Q.27 X-ray are type of wave
A. Electromagnetic
B. longitudinal
C. transverse
D. both a and c

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Q.28 Infrasonic wave has frequency

A. less than 20Hz
B. Greater than 20Hz
C. 20Hz
D. greater than 20khs

Q.29 The distance between two consecutive crests of a travelling wave is 10 cm. If the speed of the wave 50 cm/s, then its frequency would be:_____

A. 40 Hz
B. 1/5 Hz
C. 5 Hz
D. 500 Hz

Q.30 What is the unit of frequency?

A. 1/Hertz
B. 1/ second^2
C. Second
D. Hertz

Q.31 In a standing wave, the distance between a node and consecutive anti-node is:

A. Equal to one wavelength
B. Equal to two wavelengths
C. Equal to half of wavelength
D. Equal to quarter of wavelength

Q.32 The speed of sound, v, is not affected by a variation in the pressure of the gas, because:

A. Speed, v, does not depend on pressure
B. Speed, v, does not depend on density
C. Density is proportional to pressure
D. None of the above

Q.33 Wavelength of a sound wave in air is 10 cm, what is the frequency of the sound wave?

A. 33 Hz
B. 330 Hz
C. 3300 Hz
D. 33000 Hz

Q.34 If the wavelength of a wave is 20 cm and its time period is T. What is the distance travelled by a crest on the wave in 1.25T?

A. 30 cm
B. 25 cm
C. 15 cm
D. 40 cm

Q.35 Which of the following frequency of sound wave is audible?

A. 5 Hz
B. 5000 Hz
C. 2500 kHz
D. 50 kHz

Q.36 Which group consists of only electromagnetic waves:

A. microwaves, radio waves, infra-red
B. microwaves, radio waves, sound
C. microwaves, water waves, infra-red
D. n/a

Q.37 A stationary wave is formed in a pipe which is open at one end. If length of pipe is L, then what is the maximum possible wavelength of the wave?

A. L
B. 2 L
C. 3 L
D. 4 L

Q.38 The shortest distance between two points on a travelling wave that have a phase difference of (pi/3) is 5 cm. If the wave has frequency 500 Hz, what is the speed of the wave?

A. 300 m/s
B. 150 m/s
C. 300 cm/s
D. 150 cm/s

Q.39 One vibration can be defined as:

A. motion of the body from one extreme position to the other extreme position
B. motion of the body from one extreme position to the same extreme position
C. motion of the body from one extreme position to the mean position
D. motion of the body from mean position and back to the mean position

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Q.60 A wave is produced by
A. Vibrations
B. Heating
C. Freezing
D. Clapping

Q.61 Time period of the wave is 0.4 sec. How long does it take to pass 20 complete waves from a point?
A. 8 sec
B. 80 sec
C. 160 sec
D. 1/8 sec

Q.62 A stationary wave is set up in a pipe of length l, which is open from both ends. There are three nodes. How many antinodes are there in the stationary wave?
A. 2
B. 3
C. 4
D. 6

Q.63 A stationary wave is formed in a pipe which is open at one end. If ten complete loops are formed and the wavelength of the wave is 40 cm, what is the length of the pipe?
A. 10 cm
B. 13 cm
C. 13.5 cm
D. 7.5 cm

Q.64 As the wavelength of light used increases, the distance between bright fringes in the interference pattern:
A. increases
B. decreases
C. remains same
D. none of these

Q.65 In a travelling wave, five complete waves pass through a point in 10 seconds. Frequency of the wave is:
A. 0.5 Hz
B. 5 Hz
C. 50 Hz
D. 15 Hz

Q.66 A stationary wave setup in a pipe closed at one end, only odd harmonics are generated, which are given by the equation
A. $f_n = (nv) / (4l)$ where $n = 1,3,5,...$
B. $f_n = (n+v) / (4+l)$ where $n = 1,3,5,...$
C. $f_n = (nv) / (4+l)$ where $n = 1,2,3,4,5,...$
D. $f_n = (nv) / (4l)$ where $n = 1,2,3,4,5,...$

Q.67 A stationary wave is setup on a string which is fixed at both ends. The frequency of the wave is 400 Hz. If the speed of wave is 480 m/s, then what is the length of the string?
A. 1.2 m
B. 0.84 m
C. 0.80 m
D. 0.42 m

Q.68 If a pipe is closed at one end and open at the other, the closed end is a:
A. antinode
B. node
C. rarefaction
D. crest

Q.49 Frequency of a travelling wave is 2000 Hz. Its speed is 300m/s. What is its wavelength?
A. 20/3 m
B. 20x3 m
C. 3/20 m
D. 2/3 m

Q.50 The distance between two consecutive nodes in a stationary wave is equal to:
A. one wavelength
B. 2.5 wavelength
C. 3 wavelength
D. half wavelength

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Q.40 A wave is produced by

A. Disturbance
B. Heating
C. Freezing
D. Clapping

Q.41 Time period of the wave is 1/4 sec. How long does it take to pass 20 complete waves from a point?

A. 5 sec
B. 80 sec
C. 1/80 sec
D. 1/5 sec

Q.42 A stationary wave is set up in a pipe of length L, which is open from both ends. There are three nodes. How many antinodes are there in the stationary wave?

A. 2
B. 3
C. 4
D. 6

Q.43 A stationary wave is formed in a pipe which is open at one end. If two complete loops are formed and the wavelength of the wave is 10 cm, what is the length of the pipe?

A. 10 cm
B. 15 cm
C. 12.5 cm
D. 7.5 cm

Q.44 As the wavelength of light used increases. the distance between bright fringes in the interference pattern:

A. increases
B. decreases
C. remains same
D. none of these

Q.45 In a travelling wave, five complete waves pass through a point in 10 seconds. Frequency of the wave is:

A. 0.5 Hz
B. 5 Hz
C. 50 Hz
D. 15 Hz

Q.46 A stationary wave setup in a pipe closed at one end, only odd harmonics are generated, which are given by the equation

A. $f_n = (nv) / (4l)$ where n = 1,3,5,...
B. $f_n = (n+v) / (4+l)$ where n = 1,3,5,...
C. $f_n = (nv) / (4+l)$ where n = 1,2,3,4,5,...
D. $f_n = (nv) / (4l)$ where n = 1,2,3,4,5,...

Q.47 A stationary wave is setup on a string which is fixed at both ends. The frequency of the wave is 400 Hz. If the speed of wave is 480 m/s, then what is the length of the string?

A. 1.2 m
B. 0.84 m
C. 0.60 m
D. 0.42 m

Q.48 If a pipe is closed at one end and open at the other, the closed end is a:

A. antinode
B. node
C. rarefaction
D. crest

Frequency of a travelling wave is 2000 Hz. Its speed is 300m/s. What is its wavelength?

A. 20/3 m
B. 20x3 m
C. 3/20 m
D. 2/3 m

Q.50 The distance between two consecutive nodes in a stationary wave is equal to:

A. one wavelength
B. 2.5 wavelength
C. 3 wavelength
D. half wavelength

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Q.51 A stationary wave is formed in a pipe which is open at both ends. If two complete loops are formed and the wavelength of the wave is 10 cm, what is the length of the pipe?

A. 15 cm
B. 10 cm
C. 5 cm
D. 20 cm

Q.52 A pipe is filled with a gas and open at one end. If the length of the pipe is 0.6 m and the speed of sound in the gas in 300 m/s. Then frequencies of the first two harmonics are:

A. 125 Hz and 250 Hz
B. 250 Hz and 750 Hz
C. 250 Hz and 500 Hz
D. 125 Hz and 375 Hz

Q.53 The frequency of a string on a musical instrument can be changed either by:

A. varying the diameter or by changing the length
B. varying the tension or by changing the thickness
C. varying the tension or by changing the length
D. varying the thickness or by changing the length

Q.54 A standing-wave pattern is formed when the length of the string is:

A. an odd multiple of quarter wavelength
B. an integral multiple of quarter wavelength
C. an integral multiple of wavelength
D. an integral multiple of half wavelength

Q.55 Wave speed per frequency is equivalent to:

A. beats
B. Time period
C. wavelength
D. None of them

Q.56 The maximum value of displacement from the mean position is called:

A. height
B. amplitude
C. frequency
D. distance

Q.57 The object oscillates due to:

A. a restoring force
B. its weight
C. centripetal force
D. force of friction

Q.58 A wave has the speed 0.50 m/s. If its wavelength is 1.5 m. What is the period of the wave?

A. 0.33 s
B. 3 s
C. 1.5s
D. 6 s

Q.59 An object is undergoing simple harmonic motion. It's time period is T and total energy is E. The amplitude of vibration is reduced to half. What is the new time period and total energy of the system?

A. time period = T/2 total energy = E/4
B. time period = T total energy = E/4
C. time period = T/2 total energy = E/2
D. time period = T total energy = E/2

Q.60 Whenever a transverse wave travelling in a denser medium, is reflected from the boundary of the rarer medium...

A. An incident crest on reflection disappears
B. An incident trough on reflection becomes double
C. An incident crest on reflection becomes a trough
D. An incident crest on reflection remains crest

Q.61 The phase angle between two points is 3π. The distance between these points is 15 cm. What is the wavelength of the wave?

A. 30 cm
B. 45 cm
C. 5 cm
D. 10 cm

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Q.62 In a stationary wave, the distance between a node and an adjacent antinode is equal to:

A. λ
B. 2λ
C. $\lambda/2$
D. $\lambda/4$

Q.63 A stationary wave is formed in a pipe which is open at one end. If length of pipe is 5 cm, then what is the maximum possible wavelength of the wave?

A. 5 cm
B. 10 cm
C. 15 cm
D. 20 cm

Q.64 Under the action of the restoring force:

A. the speed of the body always increases
B. the body moves at constant speed
C. the body always slows down
D. the body accelerates

Q.65 An oscillation is called simple harmonic motion when:

A. acceleration is directly proportional to $-x$
B. acceleration is directly proportional to x
C. acceleration is directly proportional to v
D. acceleration is inversely proportional to $-x$

Q.66 In SONAR we use:_____

A. water waves
B. sound waves
C. microwaves
D. ultraviolet rays

Q.67 An air pipe opens at both ends. A stationary wave is produced in second harmonic mode. What is the phase difference between the motion of the particles at the end of the pipe and at the Centre of the pipe?

A. 0 deg
B. 90 deg
C. 180 deg
D. 270 deg

Q.68 When a monochromatic light travels from glass into air, then...

A. its frequency and wavelength both stays same
B. its frequency stays same but wavelength increases
C. its frequency increases but wavelength stays same
D. its frequency decreases and wavelength increase

Q.69 What is the wavelength of the wave if the phase angle between two points of the medium is $3\pi/4$ and they are seperated through a distance of 3 cm?

A. 8 cm
B. 9 cm
C. 1 cm
D. 12 cm

Q.70 The direction of the restoring force is always towards:

A. right hand
B. up ward
C. rest or mean position
D. extreme position

Q.71 In a stationary wave, the distance between adjacent antinodes is equal to:

A. λ
B. 2λ
C. $\lambda/2$
D. $\lambda/4$

Q.72 A transverse wave on a string has an amplitude A A tiny spot on the string is colored red. As one cycle of the wave passes by, what is the total distance traveled by the red spot?

A. A
B. 2A
C. A/2
D. 4A

Q.73 Whenever a transverse wave, travelling in a rarer medium, encounters a denser medium.

A. An incident crest on reflection disappears
B. An incident trough on reflection remains trough
C. An incident crest on reflection becomes a trough
D. An incident crest on reflection remains crest

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Q.74 A sound wave has a wavelength λ. What is the minimum possible distance between two points with phase difference 90 deg?

A. λ/2
B. 3λ/2
C. 5λ/2
D. λ/4

Q.75 The negative sign in F = -k.x, indicates that:

A. F is directed opposite to x
B. F is directed along x
C. F is always equal to x
D. none of these

Q.76 What is the echo of sound?

A. When sound reflects back
B. When sound gets absorbed
C. When sound penetrates into objects
D. All of them

Q.77 When a wave comes across the boundary of two media, a part of it is reflected back. Which statement is true about reflected wave:

A. its wavelength changes depending on the nature of the boundary
B. its frequency changes depending on the nature of the boundary
C. its amplitude increases depending on the nature of the boundar
D. its phase may changes depending on the nature of the boundary

Q.78 A first harmonic stationary sound wave is produced in the air of the cylinder, which is half filled with water. More water is added to the cylinder, now first harmonic stationary wave is produced with a different frequency. What is the change in frequency and the nature of displacement in air at the water surface?

A. nature of displacement = antinode change in frequency = decrease
B. nature of displacement = antinode change in frequency = increase
C. nature of displacement = node change in frequency = increase
D. nature of displacement = node change in frequency = decrease

Q.79 The density of oxygen is 16 times the density of hydrogen. If the speed of sound in oxygen is v, then what is the speed of sound in hydrogen?

A. v/4
B. 4v
C. v/2
D. none of these

Q.80 Which group consists of only electromagnetic waves:

A. microwaves, radio waves, infra red
B. microwaves, radio waves, sound
C. microwaves, water waves, infra red
D. none of these

Q.81 One vibration can be defined as:

A. motion of the body from one extreme position to the other extreme position
B. motion of the body from one extreme position to the same extreme position
C. motion of the body from one extreme position to the mean position
D. motion of the body from mean position and back to the mean position

Q.82 A stationary wave is formed in a pipe which is open at one end. If two complete loops are formed and the wavelength of the wave is 10 cm, what is the length of the pipe?

A. 10 cm
B. 15 cm
C. 12.5 cm
D. 7.5 cm

Q.83 As the wavelength of light used increases. the distance between bright fringes in the interference pattern:

A. increases
B. decreases
C. remains same
D. none of these

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Q.84 A stationary wave setup in a pipe closed at one end, only odd harmonics are generated, which are given by the equation

A. fn = (nxv) / (4xl) where n = 1,3,5,...
B. fn = (n+v) / (4+l) where n = 1,3,5,...
C. fn = (nxv) / (4+l) where n = 1,2,3,4,5,...
D. fn = (nxv) / (4xl) where n = 1,2,3,4,5,...

Q.85 A stationary wave is setup on a string which is fixed at both ends. The frequency of the wave is 400 Hz. If the speed of wave is 480 m/s, then what is the length of the string?

A. 1.2 m
B. 0.84 m
C. 0.60 m
D. 0.42 m

Q.86 If a pipe is closed at one end and open at the other, the closed end is a:

A. antinode
B. node
C. rarefaction
D. crest

Q.87 The distance between two consecutive nodes in a stationary wave is equal to:

A. one wavelength
B. 2.5 wavelength
C. 3 wavelength
D. half wavelength

Q.88 A stationary wave is formed in a pipe which is open at both ends. If two complete loops are formed and the wavelength of the wave is 10 cm, what is the length of the pipe?

A. 15 cm
B. 10 cm
C. 5 cm
D. 20 cm

Q.89 A pipe is filled with a gas and open at one end. If the length of the pipe is 0.6 m and the speed of sound in the gas in 300 m/s. Then frequencies of the first two harmonics are:

A. 125 Hz and 250 Hz
B. 250 Hz and 750 Hz
C. 250 Hz and 500 Hz
D. 125 Hz and 375 Hz

Q.90 The frequency of a string on a musical instrument can be changed either by:

A. varying the diameter or by changing the length
B. varying the tension or by changing the thickness
C. varying the tension or by changing the length
D. varying the thickness or by changing the length

Q.91 A standing-wave pattern is formed when the length of the string is:

A. an odd multiple of quarter wavelength
B. an integral multiple of quarter wavelength
C. an integral multiple of wavelength
D. an integral multiple of half wavelength

Q.92 Wave speed per frequency is equivalent to:

A. beats
B. Time period
C. wavelength
D. None of them

Q.93 Wavelength of a travelling wave is 20 cm. What is the phase angle between the two points separated through a distance of 25cm?

A. 2°
B. 2.5°
C. 3°
D. 1°

Q.94 The maximum value of displacement from the mean position is called:

A. height
B. amplitude
C. frequency
D. distance

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Q.95 A wave have the speed 0.50 m/s. If its wavelength is 1.5 m. What is the period of the wave?

A. 0.33 m
B. 3 m
C. 1.5 m
D. 6 m

Q.96 Under the action of the restoring force:

A. the speed of the body always increases
B. the body moves at constant speed
C. the body always slows down
D. the body accelerates

Q.97 When a monochromatic light travels from glass into air, then...

A. its frequency and wavelength both stays same
B. its frequency stays same but wavelength increases
C. its frequency increases but wavelength stays same
D. its frequency decreases and wavelength increases

Q.98 What is the wavelength of the wave if the phase angle between two points of the medium is $3\pi/4$ and they are separated through a distance of 3 cm?

A. 8 cm
B. 9 cm
C. 1 cm
D. 12 cm

Q.99 The direction of the restoring force is always towards:

A. right hand
B. up ward
C. rest or mean position
D. extreme position

Q.100 In a stationary wave, the distance between adjacent antinodes is equal to:

A. λ
B. 2λ
C. $\lambda/2$
D. $\lambda/4$

Q.101 Whenever a transverse wave, travelling in a rarer medium, encounters a denser medium.

A. An incident crest on reflection disappears
B. An incident trough on reflection remains trough
C. An incident crest on reflection becomes a trough
D. An incident crest on reflection remains crest

Q.102 A steel wire hangs vertically from a fixed point, supporting a weight of 80 N at its lower end. The diameter of the wire is 0.50 mm and its length from the fixed point to the weight is 1.5 m. If density of steel wire = 7.8×10^3 kg/m^3, then what is the fundamental frequency emitted from the wire.

A. 76 Hz
B. 176 Hz
C. 50 Hz
D. 150 Hz

Q.103 A sound wave has a wavelength λ. What is the minimum possible distance between two points with phase difference 90 deg?

A. $\lambda/2$
B. $3\lambda/2$
C. $5\lambda/2$
D. $\lambda/4$

Q.104 The negative sign in F = -k.x, indicates that:

A. F is directed opposite to x
B. F is directed along x
C. F is always equal to x
D. none of these

Q.105 When a wave comes across the boundary of two media, a part of it is reflected back. Which statement is true about reflected wave:

A. its wavelength changes depending on the nature of the boundary
B. its frequency changes depending on the nature of the boundary
C. its amplitude increases depending on the nature of the boundary
D. its phase may changes depending on the nature of the boundary

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Q.106 What is the phase difference between the center of compression and the center of rarefaction in longitudinal wave?

A. 0 deg
B. 45 deg
C. 90 deg
D. 180 deg

Q.107 In a stationary wave, the distance between adjacent nodes is equal to:

A. λ
B. 2λ
C. $\lambda/2$
D. $\lambda/4$

Q.108 Radar system is an application of:

A. Doppler's effect
B. mechanical effect
C. electric effect
D. magnetic effect

Q.109 Superposition of two waves having same frequency, same amplitude and travelling in the opposite direction, is called:

A. interference
B. diffraction
C. beats
D. stationary waves

Q.110 A sound wave travels from a region of hot air into a region of cold air. How does frequency and wavelength of sound change?

A. frequency decreases wavelength decreases
B. frequency increases wavelength decreases
C. frequency does not change wavelength decreases
D. frequency does not change wavelength does not change

Q.111 An object undergoes simple harmonic motion. Its amplitude is x_0. The speed of the object is v when its displacement is $x_0/3$. What is the speed when its displacement is x_0?

A. v/3
B. 2 v
C. 3/2 v
D. 0

Q.112 Whenever a transverse wave travelling in a denser medium, is reflected from the boundary of the rarer medium.

A. the direction of its displacement remains same
B. the direction of its displacement is reversed
C. the displacement disappears
D. the displacement becomes double

Q.113 A stationary wave is formed in a pipe which is open at both ends. If length of pipe is 10 cm, then what is the maximum possible wavelength of the wave.

A. 20 cm
B. 5 cm
C. 10 cm
D. 30 cm

Q.114 In simple harmonic motion, which two quantities are always in opposite direction?

A. kinetic energy and potential energy
B. kinetic energy and velocity
C. velocity and acceleration
D. acceleration and displacement

Q.115 A park has an outdoor organ. When the air temperature increases, the fundamental frequency of one of the organ pipes:

A. is impossible to determine
B. stays the same
C. decreases
D. increases

Q.116 In a periodic wave, the distance between two consecutive crests is known as:

A. wave length
B. amplitude
C. displacement
D. none of these

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Q.117 The relation between speed frequency and wavelength of a wave is:

A. speed = frequency * wavelength
B. speed * frequency = wavelength
C. speed = frequency / wavelength
D. speed = frequency + wavelength

Q.118 If a transverse wave travelling in a denser medium is incident on a rarer medium, it is:

A. reflected without any change in phase
B. reflected with phase change of 90 deg
C. reflected with phase change of 180 deg
D. reflected with phase change of 270 deg

Q.119 A vibrating string have a little sound. However, when attached with a board then sound have a greater intensity. It is because:

A. the string vibrates with more energy
B. the sound is concentrated over smaller area
C. the speed of sound is greater in board
D. the energy leaves the board at a greater rate

Q.120 Which of the following statements about wave motion is true:

A. waves transport energy and matter
B. waves transport energy without transporting matter
C. waves transport matter but not energy
D. waves on a rope, radio waves, infra red

Q.121 When a wave comes across the boundary of two media, a part of it is reflected back. Which statement is true about reflected wave:

A. the reflected wave has larger wavelength and larger frequency.
B. the reflected wave has same wavelength and larger frequency.
C. the reflected wave has larger wavelength and same frequency.
D. the reflected wave has same wavelength and same frequency.

Q.122 A simple pendulum has mass M, length L and time period T. What is the period of oscillation of the pendulum with mass 4M and length 0.49L?

A. 0.7T
B. T
C. 2T
D. 3T

Q.123 A longitudinal standing wave, in second harmonic mode, is established in a tube open at only one end. The frequency of the standing wave is 660 Hz, and the speed of sound in air is 343 m/s. What is the length of the tube?

A. twice as fast
B. half as fast
C. four times as fast
D. the same

Q.124 A pipe is open at both ends. A stationary wave is formed in the air of the pipe. Which statement is true?

A. there is always a central antinode
B. there is always a central node
C. the sum of number of nodes and the number of antinodes is always an even number
D. the sum of number of nodes and the number of antinodes is always an odd number

Q.125 The oscillating object overshoots the rest position due to:

A. restoring force
B. inertia
C. gravitational potential energy
D. elastic potential energy

Q.126 A wave passes through a medium, each particle of the medium performs 100 complete vibrations in 5 seconds. What is the frequency of the wave:

A. 2 Hz
B. 20 Hz
C. 4 Hz
D. 40 Hz

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Q.127 If displacements due to two individual waves are y1 and y2. Then the resultant displacement, y, of the particle of the medium is:

A. $y = y_1 \times y_2$
B. $y = y_1 / y_2$
C. $y = y_1 - y_2$
D. $y = y_1 + y_2$

Q.128 The waves which propagate by the oscillation of material particles are called:

A. matter waves
B. mechanical waves
C. electromagnetic waves
D. microwaves

Q.129 When path difference between two waves are integral multiple of wavelength, the resultant effect is called:

A. destructive interference
B. constructive interference
C. beats
D. diffraction

Q.130 The successive distance between two crests is called?

A. time period
B. wavelength
C. Wave speed
D. Frequency

Q.131 A stationary wave is setup on a string of length 10 cm. Four loops are formed. What is the distance between two consecutive crests?

A. 4.5 cm
B. 5 cm
C. 2.5 cm
D. 1.25 cm

Q.132 What is true about acceleration of an object undergoing simple harmonic motion?

A. acceleration is minimum when velocity is maximum
B. acceleration is proportional to the frequency of oscillation
C. acceleration is in opposite direction to its velocity
D. acceleration is minimum when potential energy is maximum

Q.133 A stationary wave is formed in a pipe which is open at both ends. If length of pipe is 10 cm, then what is the maximum possible wavelength of the wave.

A. 20 cm
B. 5 cm
C. 10 cm
D. 30 cm

Q.134 Two travelling waves of the same frequency, same amplitude and travelling in opposite direction results in:

A. beats
B. standing waves
C. diffraction
D. none of these

Q.135 When path difference between two waves are odd integral multiple of half the wavelength, the resultant effect is called

A. destructive interference
B. constructive interference
C. beats
D. diffraction

Q.136 The stationary waves can be set up on the string only with the frequencies of harmonic series determined by:

A. The tension, length and mass per unit length of the string
B. The tension and mass per unit length of the string only
C. The length and mass per unit length of the string only
D. The tension and length of the string only

7 In a periodic wave, the distance between second and fifth crests is 15 cm, what is the wavelength of the wave?

A. 45 cm
B. 5 cm
C. 1/5 cm
D. 1/3 cm

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Q.138 Two pulses move in opposite directions on a string and are identical in shape except that one has positive displacements of the elements of the string and the other has negative displacements. At the moment the two pulses completely overlap on the string, what happens?

A. the energy associated with the pulses has disappeared
B. the string does not move afterwards
C. the string forms a straight line for a moment
D. pulses vanished and will not appear again

Q.139 In a stationary waves, if the string is made to vibrate in n loops, the frequency of stationary waves set up on the string will be:

A. $f_n = n \times f_1$
B. $f_n = n + f_1$
C. $f_n = f_1 / n$
D. $n \times f_n = f_1$

Q.140 The speed of waves depends upon the:

A. tension of the string
B. tension and mass per unit length of the string
C. diameter of the string
D. mass per unit length of the string

Q.141 As the wavelength of light used increases. the distance between bright fringes in the interference pattern:

A. increases
B. decreases
C. remains same
D. none of these

Q.142 Laplace expression for the speed of the sound in a gas is:

A. $v = P/\rho$
B. $v = P x \rho$
C. $v^2 = P x \rho$
D. $v = \sqrt{\gamma P / \rho}$

Q.143 SI Unit of wavelength?

A. m
B. m^3
C. m/s
D. m/s^2

Q.144 In a periodic wave, the distance between second and fifth crests is 15 cm, what is the wavelength of the wave?

A. 45 cm
B. 5 cm
C. 1/5 cm
D. 1/3 cm

Q.145 The speed of sound in a metal is approximately:

A. 1500 m/s
B. 5000 m/s
C. 330 m/s
D. 50 m/s

Q.146 The distance between two consecutive crests of a travelling wave is 10 cm. If the speed of the wave 50 m/s, then its frequency would be:

A. 40 Hz
B. 1/5 Hz
C. 5 Hz
D. 500 Hz

Q.147 The frequency of a wave is 60 Hz. How long does it take to pass 20 complete waves from a point?

A. 1200 sec
B. 12 sec
C. 3 sec
D. 1/3 sec

Q.148 The number of vibrations executed in one second is called:

A. Period
B. Frequency
C. amplitude
D. wavelength

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Q.149 A stationary wave is set up in a pipe of length L, which is is open from one enD. There are three nodes. How many antinodes are there in the stationary wave?

A. 2 B. 3
C. 4 D. 6

Q.150 The phase angle between two points in a medium is 4pi/5. What is the separation between these two points if the wavelength of the wave is 5m.

A. 5/4 m B. 4π m
C. 2 m D. 10 m

Q.151 A longitudinal standing wave, in second harmonic mode, is established in a tube that is open at both ends. The length of the tube is 0.80 m. What is the wavelength of the waves that make up the standing wave?

A. 0.20 m B. 0.40 m
C. 0.80 m D. 1.60 m

Q.152 The phenomenon of polarization of light reveals that light waves are:....

A. transverse waves B. longitudional waves
C. mechanical waves D. none of these

Q.153 When the antinodes are all at their extreme displacements,

A. the energy stored is wholly kinetic B. the energy stored is wholly potential
C. the energy stored is kinetic and potential D. the energy stored is wholly chemical

Q.154 Whenever a transverse wave, travelling in a rarer medium, encounters a denser medium. It...

A. bounces back such that the direction of its displacement remains same
B. bounces back such that the direction of its displacement is reversed
C. Travels into second medium and the direction of its displacement is reversed
D. Travels into second medium and the direction of its displacement remains same

Q.155 A stationary source of sound produce wave of wavelength L and speed v. Now, the source moves away from the observer. What is the wavelength and speed of the sound as measured by the observer?

A. wavelength decreases speed does not change B. wavelength increases speed does not change
C. wavelength increases speed increases D. wavelength increases speed decreases

Q.156 A pipe is filled with a gas and open at one end. If the length of the pipe is 0.6 m and the speed of sound in the gas in 300 m/s. Then frequencies of the first two harmonics are:

A. 125 Hz and 250 Hz B. 250 Hz and 750 Hz
C. 250 Hz and 500 Hz D. 125 Hz and 375 Hz

Q.157 When a standing wave is set up in a pipe which is open from one end, which of the following statements is true?

A. sum of the number of antinodes and the number of nodes is always even
B. wavelength = length string / number of nodes
C. The shape of the string at any instant shows a symmetry about the midpoint of the string
D. frequency = number of nodes * fundamental frequency

58 In mass-spring system, which of the following does not depend on the initial displacement of the spring?

A. maximum kinetic energy of the mass B. average speed of the mass
C. total energy of the mass D. angular frequency of the oscillation

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Q.159 A point source broadcasts sound into a uniform medium. If the distance from the source is tripled how does the intensity change?

A. It becomes one-ninth as large
B. It becomes one-third as large
C. It becomes three times larger
D. It becomes nine times larger

Q.160 The points which are in phase are separated from one another through a distance of:

A. 1 wavelength
B. 1.5 wavelength
C. 0.5 wavelength
D. 2.5 wavelength

Q.161 Which of the following statements about speed of sound v, and temperature is correct:

A. v is directly related to temperature
B. v is directly related to square root of temperature
C. v is directly related to absolute temperature
D. v is directly related to square root of absolute temperature

Q.162 An ambulance siren emits a sound of frequency 1800 Hz. The speed of sound in air is 330 m/s. The ambulance moves towards a stationary observer at a constant speed of 50 m/s. What is the frequency heard by the observer?

A. (1800 x 290)/ 330
B. (1800 x 330) / 370
C. (1800 x 330) / 280
D. (1800 x 330) / 380

Q.163 In a stationary wave, the distance between adjacent antinodes is equal to:

A. λ
B. 2λ
C. $\lambda/2$
D. $\lambda/4$

Q.164 When a wave comes across the boundary of two media, a part of it is reflected back. Which statement. is true about reflected wave:

A. the reflected wave has larger wavelength and larger frequency.
B. the reflected wave has same wavelength and larger frequency.
C. the reflected wave has larger wavelength and same frequency.
D. the reflected wave has same wavelength and same frequency.

Q.165 The speed of sound in water is approximately:

A. 1500 m/s
B. 5000 m/s
C. 330 m/s
D. 50 m/s

Q.166 Whenever a transverse wave travelling in a denser medium, is reflected from the boundary of the rarer medium.

A. An incident crest on reflection disappears
B. An incident trough on reflection becomes double
C. An incident crest on reflection becomes a trough
D. An incident crest on reflection remains crest

Q.167 Time period of the wave is 1/4 seC. How long does it take to pass 20 complete waves from a point?

A. 5 sec
B. 80 sec
C. 1/80 sec
D. 1/5 sec

Q.168 Which of the following statement is correct about infrared radiation and X-rays?

A. Radio waves has frequency larger than X-rays but less than infrared waves
B. infrared radiation travels faster than X-rays in vacuum
C. infrared radiation has lower frequency than X-rays
D. infrared waves can not be diffracted like X-rays

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Q.169 A stationary wave is formed in a pipe which is open at both ends. If length of pipe is L, then what is the maximum possible wavelength of the wave?
A. 2L
B. 1/2 L
C. L
D. 3 L

Q.170 The speed of sound in air is approximately:
A. 1500 m/s
B. 5000 m/s
C. 350 m/s
D. 50 m/s

Q.171 A star moving away from earth shows:
A. green shift
B. red shift
C. blue shift
D. none of these

Q.172 If a transverse wave travelling in a rarer medium is incident on a denser medium, it is reflected such that...
A. it undergoes a phase change of 90 deg
B. it undergoes a phase change of 180 deg
C. it undergoes a phase change of 270 deg
D. it undergoes a phase change of 0 deg

Q.173 In a periodic wave, the distance between a crest and the next consecutive trough is 15cm. What is the wavelength of the wave?
A. 10 cm
B. 5 cm
C. 7.5 cm
D. 30 cm

Q.174 The phase angle between two points in a medium is $3\pi/4$. If the distance between these points is 20 cm, then wavelength of the wave is?
A. 8/15 m
B. 15/8 m
C. 8/15 cm
D. 15/8 cm

ANSWER KEY

1	A	21	C	41	A	61	D	81	B	101	C	121	D	141	A	161	D
2	C	22	A	42	C	62	D	82	D	102	A	122	A	142	D	162	C
3	A	23	B	43	D	63	D	83	A	103	D	123	D	143	A	163	C
4	B	24	C	44	A	64	D	84	A	104	A	124	D	144	B	164	D
5	C	25	A	45	A	65	A	85	C	105	D	125	B	145	B	165	A
6	B	26	B	46	A	66	B	86	B	106	D	126	B	146	D	166	D
7	A	27	A	47	C	67	A	87	D	107	C	127	D	147	D	167	A
8	C	28	A	48	B	68	B	88	B	108	A	128	B	148	B	168	C
9	C	29	C	49	C	69	A	89	D	109	D	129	B	149	B	169	A
10	A	30	D	50	D	70	C	90	C	110	C	130	B	150	C	170	C
11	B	31	D	51	B	71	C	91	D	111	D	131	C	151	C	171	B
12	B	32	C	52	D	72	D	92	C	112	A	132	A	152	A	172	B
13	D	33	C	53	C	73	C	93	B	113	D	133	A	153	B	173	D
14	A	34	B	54	D	74	D	94	B	114	D	134	B	154	B	174	A
15	A	35	B	55	C	75	A	95	B	115	D	135	A	155	B		
16	D	36	A	56	B	76	A	96	D	116	A	136	A	156	D		
17	D	37	D	57	A	77	D	97	B	117	A	137	B	157	A		
18	B	38	B	58	B	78	C	98	A	118	A	138	C	158	D		
19	C	39	B	59	B	79	B	99	C	119	D	139	A	159	A		
20	A	40	A	60	D	80	A	100	C	120	B	140	B	160	A		

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5 TOPIC THERMODYNAMICS

PRACTICE EXERCISE

Q.1 $C_p - C_v$ value, find if 3moles of gas is gives

A. 3R
B. 2R
C. 5R
D. 7R

Q.2 A valid unit of specific heat capacity is

A. $Jkg^{-1}K^{-1}$
B. $Jkg^{-2}K^{-1}$
C. $Jkg^{-1}K$
D. $JkgK^{-1}$

Q.3 If 1 mole of mono atomic gas $\gamma = 5/3$ is mixed with 1 mole of diatomic gas $\gamma = 7/5$. What is the value of γ for the mixture

A. 1
B. 1.5
C. 2
D. 3.5

Q.4 Find the internal energy of system containing 2 moles of oxygen and 4 moles of argon

A. 9RT
B. 11 RT
C. 15 RT
D. 10 RT

Q.5 If energy required to raise the temperature of 10°C is 20 J at constant volume then how much energy required to raise the same temperature at constant pressure.

A. 10 J
B. 40 J
C. 20 J
D. 12 J

Q.6 Find the molar specific heat capacity of diatomic gas which work done is Q/4 if heat is given to the system.

A. $\frac{10}{3}R$
B. $\frac{5}{3}R$
C. $\frac{7}{3}R$
D. $\frac{4}{3}R$

Q.7 The internal energy of one gram of helium at 100 K and one atmospheric pressure is

A. 100 J
B. 1200 J
C. 300 J
D. 600 J

Q.8 310 J of heat is required to raise the temperature of 2 moles of an ideal gas at constant pressure from 25°C to 35°C. The amount of heat energy required to raise the temperature of gas through the same range at constant volume is.

A. 83 J
B. 143 J
C. 115 J
D. 105 J

Q.9 First law of Thermodynamics is related to

A. law of conversation of energy
B. law of conversation of mass
C. law of conversation of momentum
D. law of conversation of charge

Q.10 C_v / C_p is equals to

A. γ
B. γ^2
C. $1/\gamma$
D. R

Q.11 When C_p=20 J/kg k and 1 mole of gas is present then Cv is?

A. 2.36J/kgk
B. 3.36J/kgk
C. 4.36J/kgk
D. None

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Q.12 1Gamma for poly atomic gas is
A. 1.66
B. 1.44
C. 1.29
D. 0.8

Q.13 Which one is True about C_v and C_p?
A. $C_p=C_v$
B. $C_p > C_v$
C. $C_v > C_p$
D. None

Q.14 Which of the following is incorrect?
A. $C_p - C_v=R$
B. $C_p/C_v=R$
C. $C_p = R-C_v$
D. $R + C_p= C_v$

Q.15 If pressure of diatomic gas varies as $P = aV^2$ then its heat capacity will
A. 17R/6
B. 6R/16
C. 6R/17
D. 7R/16

Q.16 Specific heat capacity in term of heat capacity is
A. C.m
B. e/m
C. C/m
D. Zero

Q.17 At 0°k which of the following properties of a gas will be zero.
A. K.E
B. P.E
C. Vibrational energy
D. Density

Q.18 What will be change in internal energy when work done by the system is 50KJ heat absorbed is 40 kJ
A. 90 kJ
B. –10 kJ
C. 190 kJ
D. –190 kJ

Q.19 Gas laws are applicable to
A. Gases as well as vapours
B. Gases alone and not to vapours
C. Gases and steam
D. Gases and vapours under certain conditions

Q.20 An ideal gas as compared to a real gas at very high pressure occupies
A. More volume
B. Less volume
C. Same volume
D. None of the above

Q.21 The unit of pressure in S.I. unit is
A. Kg/cm^2
B. mm of water column
C. Pascal
D. Bars

Q.22 Thermodynamics does not consider
A. initial and final state
B. time factor
C. bulk of matter
D. energy change

Q.23 A system which can neither exchange matter nor energy with the surroundings is called
A. Open system
B. Isolated system
C. Closed system
D. Ideal system

Q.24 Absolute zero temperature is taken as
A. – 273°C
B. 273°C
C. 237°C
D. – 373°C.

Q.25 In isothermal process
A. Pressure is constant
B. Volume is constant
C. Temperature is constant
D. Entropy is constant

?6 Absolute zero pressure will be
A. At sea level
B. When molecule moment of system is zero
't center of earth
D. None of these

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Q.27 If the volume of a gas is held constant and we increase its temperature then
A. Its pressure is constant
B. Its pressure rises
C. Its pressure falls
D. Any of above

Q.28 For a gas obeying Boyles law if the pressure is doubled the volume becomes
A. Double
B. One half
C. Four times
D. One fourth

Q.29 If C_p = 34.4 J /mol K and value of R is 8.314 then
A. Cv = 26.1 J/ mol K
B. C_v = 20.1 J/ mol K
C. C_v = 10.1 J/ mol K
D. C_v = 120.1 J/ mol K

Q.30 The difference between the principal specific heats of nitrogen is 300 J/kg-K and ratio of the two specific heats is 1.4 then
A. C_P = 1050 J/kg-K
B. C_P = 750 J/kg-K
C. C_P = 650 J/kg-K
D. C_P = 150 J/kg-K

Q.31 The equation of state corresponding to 8 g of O_2 is,
A. $PV = \frac{RT}{2}$
B. $PV = \frac{RT}{4}$
C. PV = RT
D. PV = 8RT

Q.32 Cv of a gas is 8 $calK^{-1}mol^{-1}$. Find C_P/C_V. Assume R = 2 $calK^{-1}mol^{-1}$.
A. 1.4
B. 1.33
C. 1.25
D. 1.8

Q.33 100 g of water is heated from 30 °C to 50 °C. Ignoring the slight expansion of the water, the change in its internal energy is (specific heat of water is 4184 J kg^{-1} K^{-1})
A. 4.2 kJ
B. 8.4 kJ
C. 84 kJ
D. 2.1 kJ

Q.34 When an ideal diatomic gas is heated at constant pressure, the fraction of the heat energy supplied which increases the internal energy of the gas is
A. 2/5
B. 3/5
C. 3/7
D. 5/7

Q.35 How much heat is needed to raise the temperature of a block of copper (with mass 0.5 kg) from 0°C to 100° C? (for copper, c = 386 J / kg °C)
A. 21 kJ
B. 19.3 kJ
C. 12.4 kJ
D. 6.25 kJ

Q.36 How much heat (in Joules) does it take to raise the temperature 100 g of H_2O from 22°C to 98°C?
A. 0.4 kJ
B. 60.0 kJ
C. 20.0 kJ
D. 32 kJ

Q.37 A 500 gram cube of lead is heated from 25 °C to 75 °C. How much energy was required to heat the lead? The specific heat of lead is 0.129 J/g°C.
A. 3225 J
B. 9866 J
C. 4600 J
D. 2008 J

Q.38 A closed container contains an ideal gas. Which of the following changes will result in decrease in temperature?
A. Volume decrease temperature decrease
B. Volume decrease temperature increase
C. Volume increase temperature decrease
D. Volume increase temperature increase

Q.39 The efficiency of the heat engine can be defined as:
A. $1-\frac{Q_2}{Q_1}$
B. $1-\frac{Q_1}{Q_2}$
C. $1+\frac{Q_2}{Q_1}$
D. $\frac{Q_2}{Q_1}$

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Q.40 For an isothermal process, the first law of thermodynamics can be written as:

A. Heat absorbed = work done on the system
B. Heat absorbed = work done by the system
C. Heat released = work done by the system
D. Heat released = work done by the system + change in internal energy

Q.41 The Boltzmann's constant k, is defined as:

A. $N_A + R$
B. R / N_A
C. N_A / R
D. $N_A \times R$

Q.42 A liquid has mass m and specific heat capacity c. The rate of change in temperature of liquid is R. What is the rate at which heat is transferred from the liquid?

A. Rmc
B. R / mc
C. mc / R
D. Rm / c

Q.43 100 W heater is used to heat 500 g of water from 20C to 50C. How long should the heater be switched on? Specific heat capacity of water is 4.2 J/gC.

A. 63 sec
B. 63 min
C. 630 sec
D. 6.3 min

Q.44 The energy input to an engine is 60 J, and the work it performs is 15 J. What is its thermal efficiency?

A. 4.00
B. 1.00
C. 0.25
D. Impossible to determine

Q.45 Which of the following is equivalent to a temperature 150K?

A. 123 °C
B. –123 °C
C. 423 °C
D. –423 °C

Q.46 A monatomic ideal gas is thermally insulated, so no heat can flow between it and its surroundings. Is it possible for the temperature of the gas to rise?

A. Yes. The temperature can rise if work is done by the gas
B. No. The only way that the temperature can rise is if heat is added to the gas
C. Yes. The temperature can rise if work is done on the gas
D. No. The only way that the temperature can rise is by adding more molecules in container

Q.47 Some ice, at its melting point, is added to m kg of water at initial temperature 290 K. If c is the specific heat capacity of water and L is latent heat of fusion of ice. Ice melts completely. Final temperature of the water is 273 K. What is the minimum mass of ice that is required?

A. 17mc / L
B. L / 17mc
C. 17m / Lc
D. 290m / Lc

Q.48 Under what conditions of temperature and pressure does a real gas approximate to an ideal gas?

A. Pressure low temperature low
B. Pressure low temperature high
C. Pressure high temperature low
D. Pressure high temperature high

Q.49 In which process the net work done is zero?

A. Cyclic
B. Free expansion
C. Isochoric
D. Adiabatic

Q.50 Internal energy remains same throughout the process in

A. Adiabatic process
B. Isothermal process
C. Cyclic process
D. Both A. and B.

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Q.51 An ideal gas is compressed to half of its initial volume. Which of this process would result in maximum work done?

A. Adiabatic
B. Isobaric
C. Isochoric
D. Isothermal

Q.52 If system changes from a state P_1 V_1 to P_2V_2 by two paths then quantity which remains unchanged is

A. dQ
B. dW
C. dQ-dW
D. dQ+Dw

Q.53 An ideal reversible heat engine is 1 efficient only if:

A. Hot reservoir is at 0K
B. Hot reservoir is at °C
C. Cold reservoir is at 0C
D. Cold reservoir is at 0K

Q.54 Efficiency of heat engine in Terms of Temperature of reservoir and sink is defined as

A. T_1/T_2
B. $1+T_1/T_2$
C. $1-T_1/T_2$
D. T_2/T_1

Q.55 According to First law of thermodynamics,

A. dQ= dW-dU
B. dQ=dU
C. dQ= dU+dW
D. dQ= dW

Q.56 Which of the following is a thermodynamic coordinate?

A. P
B. T
C. V
D. R

142. When heat is given to isobaric process then

A. Work is done by the gas
B. Internal energy of gas decreases
C. Both 'A' and 'B'
D. None of them

Q.57 If N is the number of molecules of a gas in a container. Then number of moles can be calculated as:

A. $N + N_A$
B. $N_A \div N$
C. $N \div N_A$
D. $N \times N_A$

Q.58 100 W heater is used to melt 50 g of ice at 0C. How long should the heater be switched on? Specific latent heat of fusion of ice is 334 J/g.

A. 28 min
B. 16.7 min
C. 2.8 min
D. 167 min

Q.59 The sum of all forms of molecular energies (kinetic and potential) of a substance is termed as its:

A. Absolute temperature
B. Internal energy
C. Potential energy
D. Kinetic energy

Q.60 When an ideal gas of constant mass is heated in a container of fixed volume. What is the reason for the increase in pressure of the gas?

A. Number of molecules per unit volume increases
B. Molecules occupy greater volume of the container
C. Average force per impact at the container wall increases
D. Molecules collide with each other with greater force

Q.61 Isothermal process can be defined as:

A. PV = constant
B. PV = RT
C. P / V = constant
D. P / V = nRT

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Q.62 Which one of the following process is irreversible?
A. Slow compressions of an elastic spring
B. Slow evaporation of a substance in an isolated vessel
C. Slow compression of a gas
D. a chemical explosion

Q.63 During an adiabatic process the pressure of the gas is found to be proportional to fourth power of temperature. The ideal gas would be
A. H_2
B. He
C. CH_2
D. Mixture of H_2 and He

Q.64 Temperature is defined by
A. First law of thermodynamics
B. Zeroth law of thermodynamics
C. Second law of thermodynamics
D. Third law of thermodynamics

Q.65 Internal energy of the system depends on:
A. Initial and final states of the system and the path from initial to final state
B. Initial and final states of the system only
C. Initial state of the system and the path from initial to final state
D. The path from initial to final state

Q.66 Initial mass of water, at its boiling point, is 0.8 kg. 4 kW of heater is used to boil it completely. Assuming the specific latent heat of vaporization of water is 2MJ/kg, what is the time taken to vaporize all the water?
A. 400 s
B. 4000 s
C. 250 s
D. 2500 s

Q.67 100 W heater is used for 5 minutes to heat 500 g of water. What is the change in temperature of water? Specific heat capacity of water is 4.2 J/gC.
A. 140C
B. 40C
C. 0.2 C
D. 14C

Q.68 100 W heater is used for 5 minutes to heat some water from 20C to 50C. What is the mass of water which is heated? Specific heat capacity of water is 4.2 J/gC.
A. 4 g
B. 40 g
C. 240 g
D. 24 g

Q.69 A car of mass M is moving with speed v. The brake of mass m and specific heat capacity c, is used to stop the car. If half of the kinetic energy of the car is absorbed by the brake, then what is the increase in temperature of the brake?
A. $Mv^2/4mc$
B. $Mv^2/2mc$
C. $mv^2/4Mc$
D. $mv^2/2Mc$

Q.70 If dU and dW represent internal energy and work done then which is true?
A. dU =-dW in a adiabatic process
B. dU= dW in Isothermal process
C. dU=dW in adiabatic process
D. dU=-dW in isothermal process

Q.71 P-V diagram of a diatomic gas is a straight line passing through origin. What is the molar heat capacity of the gas in the process?
A. R
B. 1.5R
C. 3R
D. 4R/3

What does the constant n represent in the equation of state for an ideal gas V=nRT?
A. Number of atoms in the gas
B. Number of moles of the gas
C. Number of nucleons
D. Number of molecules of gas

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Q.73 If $P = P_o$ and $V = V_o$ gas expands isothermally to $P = 3P_o$ then Volume is
A. $3V_o$
B. $2V_o$
C. $V_o/3$
D. $V_o/2$

Q.74 Which of the terms is related with thermodynamics?
A. System
B. Surrounding
C. Boundary
D. All of these

Q.75 Amount of heat supplied to 0.02 kg of nitrogen to raise its temperature by 45 degree is
A. 935J
B. 934J
C. 967J
D. 954J

Q.76 What is the internal energy change in system that has absorbed 800J of heat and work done is 500J?
A. 200J
B. 550J
C. 600J
D. 300J

Q.77 "The heat required to raise the temperature of one mole of the substance through 1 K" is called:
A. Specific latent heat
B. Molar heat capacity
C. Molar specific heat
D. Specific heat capacity

Q.78 Which of the following is not an assumption of the kinetic model of an ideal gas?
A. Collisions between molecules and walls of container are elastic
B. The duration of collision between molecules is very short
C. All particles of gas has same speed
D. All particles of gas have same mass

Q.79 The thermodynamics process during which the pressure is kept constant, is called:
A. Isochoric
B. Isobaric
C. Adiabatic
D. Isothermal

Q.80 An ideal gas has a volume of 20 ml, a temperature of 10 °C and a pressure of 100 kPa. The volume of the gas is reduced to 10 ml and the temperature is raised to 20 °C. What is the new pressure of the gas?
A. 370 kPa
B. 207 kPa
C. 400 kPa
D. 27 kPa

Q.81 Two identical gases expand i) isothermally ii) adiabatically. Work done is more in
A. Isothermal process
B. Adiabatic process
C. Neither of them
D. Equal in both cases

Q.82 In which of the following processes the heat is neither absorbed nor released by a system?
A. Isochoric
B. Isothermal
C. Adiabatic
D. Isobaric

Q.83 A heater is used for 5 minutes to heat 500 g of water from 20C to 50C. What is the power of heater? Specific heat capacity of water is 4.2 J/gC.
A. 1260 W
B. 12.6 kW
C. 210 kW
D. 12.6 W

Q.84 1 Which of the following is equivalent to a temperature -50C?
A. –223K
B. 223 K
C. –323 K
D. 323 K

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Q.85 In Boyle's law, which quantity is constant

A. P
B. T
C. V
D. R

Q.86 A gas expands from V_1 to V_2. The amount of work done is greatest in

A. Adiabatic
B. Isobaric
C. Isochoric
D. Isothermal

Q.87 If heat given is 6 kcal and work done is 6 kJ, then internal energy is

A. 19.1 kJ
B. 25.2 kJ
C. 25kJ
D. Zero

Q.88 A container is filled with oxygen and helium at the same temperature. The molar mass of oxygen is 32 g/mol and that of helium is 4 g/mol. What is the ratio: average speed of oxygen molecules _____ average speed of helium molecules?

A. $1/\sqrt{8}$
B. $\sqrt{8}$
C. 1 / 8
D. 8

Q.89 How much energy is required to raise the temperature of 5.00 kg of lead from 20.0°C to its melting point of 327°C? The specific heat of lead is 128 J/kg °C.

A. 1.96×10^5 J
B. 4.04×10^5 J
C. 1.07×10^5 J
D. 8.15×10^4 J

Q.90 In Thermodynamics first law is related with

A. Pressure conservation
B. Entropy conservation
C. Temperature conservation
D. Energy Conservation

Q.91 In the VT diagram slope of curve is

A. R
B. nR/P
C. P
D. R/P

Q.92 "The amount of heat transfer required to raise the temperature of one mole of the gas through 1 K at constant pressure" is called:

A. The molar specific heat at constant pressure
B. Molar heat capacity
C. Specific latent heat
D. Specific heat capacity

Q.93 The energy input to an engine is 4.00 times greater than the work it performs. What fraction of the energy input is expelled to the cold reservoir?

A. 0.25
B. 0.75
C. 1
D. Impossible to determine

Q.94 100 W heater is switched on for 5 minutes to melt ice. What is the mass of ice that melts at 0C. Specific latent heat of fusion of ice is 334 J/g.

A. 90 g
B. 90 kg
C. 1.5 g
D. 1.5 kg

Q.95 In Thermodynamics zeroth law is related with:

A. Work
B. Energy
C. Thermal equilibrium
D. Entropy

Q.96 The value of universal gas, R, constant is:

A. 8.314 J/mol/K
B. 1.38×10^{-23} J/K
C. 6.63×10^{-11} Nm^2/kg^2
D. 1.6×10^{-19} C

Which of this is constant in adiabatic process:

A. Total heat
B. Work done
C. Entropy
D. Both 'A' and 'C'

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Q.98 Which of the following is not an assumption of the kinetic model of an ideal gas?
A. Particles collide elastically
B. Kinetic energy of a given particle is same
C. The duration of collision between molecules is very short
D. Intermolecular potential energy of the molecules is zero

Q.99 A cycle tyre bursts suddenly is an example of:
A. Isothermal process
B. Isochoric process
C. Adiabatic process
D. Isobaric process

Q.100 300 W heater is used to boil 500g of water at 100C. How long should the heater be switched on? Specific latent heat of vaporization of water is 2230 J/g.
A. 62 mins
B. 62 sec
C. 1.5 hour
D. 0.5 hour

Q.101 An ideal gas of N molecules are enclosed in a container at a constant pressure p. The graph between volume of gas and its absolute temperature is a straight line. What is the gradient of the graph?
A. N R / p
B. NRP
C. N k / p
D. Nkp

Q.102 The efficiency of diesel engine is:
A. 10% to 20%
B. 20% to 35%
C. 35% to 40%
D. 40% to 50%

Q.103 Isothermal system has constant
A. Temperature
B. Pressure
C. Entropy
D. Energy conservation

Q.104 When no heat enters or leaves the system, it is called:
A. Isothermal
B. Adiabatic
C. Isovolumetric
D. Isobaric

Q.105 The engine is supposed to work between 727 degree C and 227 degree C, then maximum possible efficiency is:
A. 1/2
B. 1/4
C. 3/4
D. 1

Q.106 Molar mass of water is:
A. 0.018 kg/mol
B. 0.108 kg/mol
C. 0.027 kg/mol
D. 0.0635 kg/mol

Q.107 An ideal gas at 15.5C and a pressure of 1.72×10^5 Pa occupies a volume of 2.81 m^3. How many moles of gas are present?
A. 2.01 mol
B. 21 mol
C. 201 mol
D. 2001 mol

Q.108 One kcal =
A. 4.18 J
B. 4180 J
C. 2.09 J
D. 2090 J

Q.109 If 1 mole of an ideal gas is heated at constant volume so that its temperature rises by ΔT, then first law of thermodynamics can be written as:
A. $\Delta U + Cv = \Delta T$
B. $\Delta U = Cv - \Delta T$
C. $\Delta U = Cv\,\Delta T$
D. $\Delta U = Cv + \Delta T$

Q.110 A gas expands 0.25 m^3 at constant pressure $10^3 N/m^2$ then work done is:
A. 0.25 ergs
B. 25ergs
C. 250 joules
D. 250W

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Q.111 For ideal polyatomic gas molar specific heat is equal to:
A. 24.9 J/mol.K
B. 12.9 J/mol.K
C. 15 J/mol.K
D. 16 J/mol.K

Q.112 All changes which occur suddenly or which involve friction or dissipation of energy through conduction, convection or radiation are:
A. Irreversible changes
B. Chemical changes
C. Cyclic changes
D. Reversible changes

Q.113 Which of the following is equivalent to a temperature –15°C?
A. 123K
B. –123 K
C. 423 K
D. –423 K

Q.114 Which statement is incorrect?
A. In a isobaric process $\Delta P=0$
B. In a isochoric process $\Delta W=0$
C. In a isothermal process $\Delta T=0$
D. In a isothermal process $\Delta Q=0$

Q.115 The value of triple point of water is:
A. 1 K
B. 100 K
C. 273.16 K
D. 0 K

Q.116 Under a cyclic path, internal energy after complete cycle is same as
A. 2(initial)
B. Initial heat
C. Initial internal energy
D. Initial work

Q.117 Initial pressure and volume are P and V respectively. First it expanded isothermally to 4V then compressed adiabatically to Volume V, the final pressure is:
A. 2P
B. 1P
C. 3P
D. 4P

Q.118 A reversible Carnot engine converts 1/6th of heat into input work then efficiency of engine is
A. 0.5
B. 0.6
C. 0.1666
D. 0.32

Q.119 Specific heat of water is
A. 1J/K.g
B. 4.18 J/Kg.K
C. 4180 J/kg.K
D. 2090 J/kg.K

Q.120 Two objects, with different sizes, masses, and temperatures, are placed in thermal contact. In which direction does the energy travel?
A. Energy travels from the larger object to the smaller object
B. Energy travels from the object with more mass to the one with less mass
C. Energy travels from the object at higher temperature to the object at lower temperature
D. Energy does not travel

Q.121 Area of PV diagram gives
A. Internal energy
B. Work done
C. Entropy
D. Heat

Q.122 First law of thermodynamics is a special case of:
A. Newton's law
B. Charles's law
C. Conservation of energy
D. Conservation of entropy

Q.123 Work done in an adiabatic process in a gas depends on:
A. Change in pressure
B. Change in temperature
C. Change in Volume
D. All of these

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Q.124 When the amount of work done is 33 cal and internal energy is 167 cal then heat supplied is:
A. 167 cal
B. 175 cal
C. 500 cal
D. 600 cal

Q.125 The energy input to an engine is 60 J, and the work it performs is 15 J. What fraction of the energy input is expelled to the cold reservoir?
A. 0.25
B. 75%
C. 1
D. Impossible to determine

Q.126 The energy input to an engine is 4.00 times greater than the work it performs. What is its thermal efficiency?
A. 4.00
B. 1.00
C. 0.25
D. Impossible to determine

Q.127 Heat reservoir is a _____ Temperature bath.
A. Constant
B. Variable
C. Zero
D. High

Q.128 Slope of adiabatic (ks) and isothermal(kt) curve related as:
A. ks= γkt
B. ks=kt/γ
C. ks= kt
D. ks=2kt

Q.129 If the heat absorbed is 10J and Work done is 5 J, then change in internal energy is:
A. –5J
B. 10J
C. 15J
D. 5J

Q.130 A sample of 0.1g of water at 100 degree C and normal pressure (1.013×10^5 Nm^{-2}) requires 54 cal of heat energy to convert to steam at 100 °C. If the volume of the steam produced is 167.1 c°C, the change in internal energy of the sample, is:
A. 104.3 kJ
B. 208.6kJ
C. 42.2 kJ
D. 84.5 KJ

Q.131 A monatomic gas at pressure P and Volume V expands isothermally to volume 2V and then adiabatically to volume 16V. The final pressure is:
A. 16P
B. 64P
C. 32P
D. P/64

Q.132 When temperature of the system does not change, it is called:
A. Isothermal
B. Adiabatic
C. Isovolumetric
D. Isobaric

Q.133 A fraction of internal energy is due to the molecular vibration, which is different in different states of matter. Which of the following gives the correct order of fraction of internal energy due to molecular vibration?
A. Solid > gas > liquid
B. Gas > liquid > solid
C. Solid > liquid > gas
D. Gas > liquid > solid

Q.134 A 1.0 kW heater supplies energy to a liquid of mass 1 kg. The temperature of the liquid changes by 80 K in a time of 400 s. The specific heat capacity of the liquid is 4.0 kJ / kg×K. What is the average power lost by the liquid?
A. 100
B. 200
C. 400
D. 800

Q.135 For an adiabatic process, the first law of thermodynamics can be written as:
A. Work done by the system = decrease in internal energy of system
B. Work done by the system = increase in internal energy of system
C. Work done on the system = decrease in internal energy of system
D. Work done on the system = decrease in internal energy of system + heat released

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Q.136 Adiabatic process can be defined as:

A. PV^{γ} = constant
B. $PV = \gamma RT$
C. P/V^{γ} = constant
D. $PV_{\gamma} = nRT$

Q.137 During an adiabatic process pressure of gas is found to be proportional to the cube of its temperature. The ratio of C_p/C_v is

A. $\frac{4}{3}$
B. 2
C. $\frac{3}{2}$
D. $\frac{5}{3}$

Q.138 A reversible Carnot engine converts 1/6th of heat into input work. When the temperature of sink is reduced by 62 degree C then efficiency is doubled then temperature of source and sink is

A. 80 °C, 37 °C
B. 99 °C, 30 °C
C. 99 °C, 25 °C
D. 99 °C, 37 °C

Q.139 The sum of all forms of molecular energies (kinetic and potential) of a substance is termed as its:

A. Absolute temperature
B. Internal energy
C. Potential energy
D. Kinetic energy

Q.140 Specific latent heat of fusion of ice is 334 J/g. How much energy is needed to melt 2 kg of ice at 0C.

A. 6.68×10^5 J
B. 6.68×10^5 kJ
C. 668 J
D. 668 kJ

Q.141 A thermodynamic system undergoes a process in which its internal energy decreases by 300 J. If at the same time 120 J of work is done on the system, find the heat lost by the system

A. –420 J
B. 420 J
C. 80 J
D. –80 J

Q.142 An ideal reversible heat engine has:

A. 1 efficiency
B. Highest efficiency
C. An efficiency which depends on the nature of substance
D. None of these

Q.143 A monatomic gas at pressure P and Volume V expands isothermally to volume 2V and then adiabatically to volume 16V. The final pressure is

A. 16P
B. 64P
C. 32P
D. P/64

Q.144 What does the constant n represent in the equation of state for an ideal gas PV=nRT?

A. Number of atoms in the gas
B. Number of moles of the gas
C. Number of nucleons
D. Number of molecules of gas

Q.145 Which of the following process is reversible?

A. Transfer of heat by radiation
B. Electrical heating by nichrome wire
C. Transfer of heat by conduction
D. Isothermal compression

Q.146 Efficiency of heat engine in Terms of Temperature of reservoir and sink is defined as

A. T_1 / T_2
B. $1 + T_1/T_2$
C. $1 - T_1/T_2$
D. T_2 / T_1

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Q.147 Which of the terms is related with thermodynamics?

A. System
B. Surrounding
C. Boundary
D. All of these

Q.148 The value of universal gas, R, constant is:

A. 8.314 J/mol×K
B. 1.38×10^{-23} J/K
C. 6.63×10^{-11} Nm^2/kg^2
D. 1.6×10^{-19} C

Q.149 Under what conditions of density and pressure does a real gas approximate to an ideal gas?

A. Density high pressure high
B. Density low pressure high
C. Density high pressure low
D. Density low pressure low

Q.150 Which one of the following is not the unit of heat?

A. calorie
B. joule
C. watt sec
D. watt

Q.151 A heat engine performs 100 J of work and at the same time rejects 400 J of heat energy to the cold reservoirs. What is the efficiency of the engine?

A. 20%
B. 25%
C. 4%
D. 50%

Q.152 The energy input to an engine is 4.00 times greater than the work it performs. What fraction of the energy input is expelled to the cold reservoir?

A. 0.25
B. 0.75
C. 1
D. Impossible to determine

Q.153 The value of universal gas, R, constant is:

A. 8.314 J/mol × K
B. 1.38×10^{-23} J/K
C. 6.63×10^{-11} Nm^2/kg^2
D. 1.6×10^{-19} C

Q.154 Two objects, with different sizes, masses, and temperatures, are placed in thermal contact. In which direction does the energy travel?

A. Energy travels from the larger object to the smaller object
B. Energy travels from the object with more mass to the one with less mass
C. Energy travels from the object at higher temperature to the object at lower temperature
D. Energy does not travel

Q.155 A 500 W electric heater is used to heat 1 kg of water without energy losses. The specific heat capacity of water is 4.2 kJ kg K. What is the time taken to heat the water from 25 °C to 75 °C?

A. 7 seconds
B. 42 seconds
C. 7 minutes
D. 420 minutes

Q.156 A reversible engine works between two temperatures whose difference is 100°C. If it absorbs 746 J of heat from the source and rejects 546 J to the sink, calculate the temperature of the source and the sink.

A. 100°C, 20°C
B. 100°C, 0°C
C. 80°C, 0°C
D. 80°C, 20°C

Q.157 If for a gas dW=0, dQ<0 then

A. Temperature increases
B. Pressure increases
C. Pressure decreases
D. Volume decreases

Q.158 The energy input to an engine is 4.00 times greater than the work it performs. What fraction of the energy input is expelled to the cold reservoir?

A. 0.25
B. 0.75
C. 1
D. Impossible to determine

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Q.159 The energy input to an engine is 4.00 times greater than the work it performs. What is its thermal efficiency?

A. 4.00
B. 1.00
C. 0.25
D. Impossible to determine

Q.160 Which of the following is not an assumption of the kinetic model of an ideal gas?

A. The size of the molecules is much smaller than the separation between molecules
B. Molecules suffer negligible momentum change during wall collisions
C. Molecules do not exert force on each other except during a collision
D. The gas molecules are in random motion and may change their direction of motion after every collision

Q.161 A monatomic gas is heated from temperature T1 and T2 under two different conditions at (i)constant Volume and (ii)constant pressure. So change in U is

A. More for (i)
B. More for (ii)
C. Same for both
D. Independent of number of moles

Q.162 Work done in an adiabatic process of gas from T1 to T2 is

A. $\frac{nR}{\gamma-1}(T_1-T_2)$
B. $\frac{nR}{\gamma-1}(T_1+T_2)$
C. nR(T2–T1)
D. R(T2–T1)

Q.163 The increase in temperature of the object is an indication of:

A. Decrease in the internal energy
B. Increase in the internal energy
C. Increase in the potential energy only
D. Decrease in the kinetic energy only

Q.164 100 W heater is used for 5 minutes to heat 500 g of water. What is the change in temperature of water? Specific heat capacity of water is 4.2 J/gC.

A. 140C
B. 40C
C. 0.2 C
D. 14C

Q.165 Which of the following is not an assumption of the kinetic model of an ideal gas?

A. The size of the molecules is much smaller than the separation between molecules
B. Molecules suffer negligible momentum change during wall collisions
C. Molecules do not exert force on each other except during a collision
D. The gas molecules are in random motion and may change their direction of motion after every collision

Q.166 If 110 J heat is added to the system and 40J work is done, then amount of work done is

A. 70J
B. 150J
C. 190J
D. 180J

Q.167 An adiabatic change is the one in which:

A. No heat is added to or taken out of a system
B. No change of temperature takes place
C. Boyle's law is applicable
D. Pressure and volume remains constant

Q.168 Internal energy remains same throughout the process in

A. Adiabatic process
B. Isothermal process
C. Cyclic process
D. Both (i) and (ii)

Q.169 The sum of all forms of molecular energies (kinetic and potential) of a substance is termed as its:

A. Absolute temperature
B. Internal energy
C. Potential energy
D. Kinetic energy

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Q.170 Equal masses of paraffin and water are mixed in a container of negligible thermal capacity. Initial temperature of water is 80C and that of paraffin is 20C. The final temperature of mixture is:

A. 70C
B. 60C
C. 50C
D. 40C

Q.171 For a reversible process, necessary condition is

A. Heat energy should be zero
B. Process must be fast
C. Process must be quasistatic
D. Process must not be in equilibrium

Q.172 If the system goes from two different paths to same final state, then Q1 and W1 and Q2 and W2 are heat absorbed and work done then

A. $Q_1 = Q_2$
B. $W_1 = W2$
C. $Q1 + W_1 = Q_2 + W_2$
D. $Q_1 - W_1 = Q_2 - W_2$

Q.173 A liquid has specific heat capacity c. The rate of change in temperature of liquid is R. The rate at which heat is transferred from the liquid is P. What is the mass of the liquid?

A. P / cR
B. PR / c
C. Pc / R
D. Cpr

Q.174 The energy input to an engine is 60 J, and the work it performs is 15 J. What fraction of the energy input is expelled to the cold reservoir?

A. 0.25
B. 75%
C. 1
D. Impossible to determine

Q.175 A temperature of 162 C is equivalent to what temperature in kelvins?

A. –111 K
B. 362 K
C. 425 K
D. 111 K

Q.176 When an ideal gas of constant mass is heated in a container of fixed volume. What is the reason for the increase in pressure of the gas?

A. Number of molecules per unit volume increases
B. Molecules occupy greater volume of the container
C. Average force per impact at the container wall increases
D. Molecules collide with each other with greater force

Q.177 A common material for cushioning objects in packages is made by trapping bubbles of air between sheets of plastic. Is this material more effective at keeping the contents of the package from moving around inside the package on?

A. A hot day
B. A cold day
C. Either hot or cold days
D. There is not enough information to say

Q.178 The first law of thermodynamics can be stated as:

A. $Q = \Delta U + W$
B. $Q + \Delta U = W$
C. $Q = \Delta U - W$
D. $Q = \Delta U * W$

Q.179 Which of this is constant in isothermal process?

A. Total heat
B. Work done
C. Entropy
D. Internal energy

Q.180 Work done in a isobaric process is given by

A. PdT
B. PdV
C. VdP
D. P^2dV

Q.181 The energy input to an engine is 4.00 times greater than the work it performs. What fraction of the energy input is expelled to the cold reservoir?

A. 0.25
B. 0.75
C. 1
D. Impossible to determine

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Q.182 How much energy is required to raise the temperature of 5.00 kg of lead from 20.0°C to its melting point of 327°C? The specific heat of lead is 128 J/kg? °C.

A. 1.96×10^5 J
B. 4.04×10^5 J
C. 1.07×10^5 J
D. 8.15×10^4 J

Q.183 Under which conditions, a real gas approximate to an ideal gas?

A. Pressure = high density = high
B. Pressure = low density = high
C. Pressure = high density = low
D. Pressure = low density = low

Q.184 The efficiency of petrol engine is:

A. 10% to 25%
B. 25% to 30%
C. 30% to 40%
D. 40% to 50%

Q.185 A refrigerator operates for a certain time, and the work done by the electrical energy during this time is W=1000J. What can be said about the heat delivered to the room containing the refrigerator?

A. The heat delivered to the room is less than 1000 J
B. The heat delivered to the room is equal to 1000 J
C. The heat delivered to the room is greater than 1000 J
D. No heat is delivered to the room

Q.186 First law of thermodynamics state

A. System can do work
B. System has temperature
C. System has pressure
D. Heat is form of energy

Q.187 If the temperature of a reservoir of Carnot engine working with efficiency 70% is 1000K, then temperature of sink is

A. 300K
B. 400K
C. 500K
D. 700K

Q.188 A monatomic gas is supplied the heat Q very slowly keeping pressure constant. The work done by the gas is

A. 2/3Q
B. 1/3 Q
C. Q/2
D. 2Q/5

Q.189 The energy input to an engine is 60 J, and the work it performs is 15 J. What is its thermal efficiency?

A. 4.00
B. 1.00
C. 0.25
D. Impossible to determine

Q.190 What does the constant N represent in the equation of state for an ideal gas PV=NkT?

A. Number of molecules of gas
B. Number of moles of the gas
C. Number of nucleons
D. Number of protons

Q.191 Work done by gas, pressure and change in volume are related as:

A. P W = ----- ΔV
B. W= $P\Delta V$
C. W= $P+\Delta V$
D. W= $P - \Delta V$

Q.192 If Q, E and W are the parameters in cyclic process then

A. W = 0
B. Q = 0 = W
C. E = 0
D. W = 0

Q.193 An ideal gas at 15.5C and a pressure of 1.72×10^5 Pa occupies a volume of $2.81m^3$. If the volume is raised to $4.16m^3$ and the temperature raised to 28.2C, what will be the pressure of the gas?

A. 121 × 10^5 Pa
B. 1.21 × 10^5 Pa
C. 1.21 Pa
D. 121 Pa

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Q.194 Which of the following is an example of isothermal process?
A. The rapid escape of air from a burst tyre
B. The rapid expansion and compression of air through which a sound wave is passing
C. Cloud formation in the atmosphere
D. Slow compression or expansion of gas

Q.195 The work done can also be calculated by:
A. Gradient of tangent of the, curve of P-V graph
B. Area of the curve under P-V graph
C. Area of the, curve under P-T graph
D. Gradient of tangent of the, curve of P-T graph

Q.196 What does the constant N represent in the equation of state for an ideal gas PV=NkT?
A. Number of molecules of gas
B. Number of moles of the gas
C. Number of nucleons
D. Number of protons

Q.197 Under which conditions, a real gas approximate to an ideal gas?
A. Pressure = high density = high
B. Pressure = low density = high
C. Pressure = high density = low
D. Pressure = low density = low

Q.198 A fixed mass of gas undergoes isochoric (isovolumetric) change. As a result, the pressure of the gas has increased. Which of the following is true about the gas?
A. internal energy=decrease direction of transfer of thermal energy=released from the gas
B. internal energy = decrease direction of transfer of thermal energy = absorbed by the gas
C. internal energy = increase direction of transfer of thermal energy = released from the gas
D. internal energy = increase direction of transfer of thermal energy = absorbed by the gas

Q.199 Which of the following cannot determine the state of thermodynamic system?
A. P and V
B. P and T
C. T and V
D. P and R

Q.200 In adiabatic expansion
A. $\Delta U = 0$
B. ΔU = negative
C. ΔU = positive
D. $\Delta W = 0$

Q.201 What is the internal energy change in system that has absorbed 800J of heat and work done is 500J?
A. 200J
B. 550J
C. 600J
D. 300J

Q.202 In Thermodynamics zeroth law is related with
A. Work
B. Energy
C. Thermal equilibrium
D. Entropy

Q.203 When we heat a substance, energy associated with its atoms or molecules is increased. It means...
A. Heat is converted to internal energy
B. Heat is converted to only potential energy of the particles
C. Heat is converted to only kinetic energy of the particles
D. Heat is converted to temperature of gas

Q.204 Two containers hold an ideal gas at the same temperature and pressure. Both containers hold the same type of gas, but container B has twice the volume of container A. What is the average translational kinetic energy per molecule in container B?
A. Twice that of container A
B. The same as that of container A
C. Half that of container A
D. Impossible to determine

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Q.205 Cyclic path is one in which initial state is equal to

A. 2(final state)
B. Final state
C. 3(final state)
D. Not enough information

Q.206 If 1.002×10^6 J if thermal energy is required to melt some ice at its melting point, what is the mass of ice that melts? Specific latent heat of fusion of ice is 334 J/g

A. 1 kg
B. 2 kg
C. 3 kg
D. 4 kg

Q.207 The turbine in a steam power plant takes steam from a boiler at 427°C and exhausts into a low. temperature reservoir at 77°C. What is the maximum possible efficiency?

A. 20%
B. 25%
C. 4%
D. 50 %

Q.208 Which of the following statement is not true about heat engine?

A. All real engines are less efficient than Carnot engine
B. All real engines are less efficient due to friction and heat losses
C. Efficiency of Carnot engine working between same two temperatures, depends on the nature of working substanc
D. The larger the temperature difference of two reservoirs, the greater is the efficiency

Q.209 The internal energy change in system that has absorbed 2kcal of heat and done 500J of work is:

A. 8900J
B. 8800J
C. 7900J
D. 7500J

Q.210 The molar specific heat of a diatomic gas is measured at constant volume and found to be 29.1 J/mol? K. What are the types of energy that are contributing to the molar specific heat?

A. Translation only
B. Translation and rotation only
C. Translation and vibrational only
D. Translation, rotation, and vibrational

Q.211 In which process the net work done is zero?

A. Cyclic
B. Free expansion
C. Isochoric
D. Adiabatic

Q.212 Which of the following is an assumption of the kinetic model of an ideal gas?

A. Gas is at high pressure
B. Collision between particles are elastic
C. There are weak forces of attraction between particles in gas
D. Total energy of particles is proportional to the temperature

Q.213 During adiabatic expansion internal energy decreases by 2J, then work done in this process is

A. 2J
B. 1J
C. –1J
D. –2J

Q.214 Two containers X and Y are filled with an ideal gas. X has 1 mol of gas and Y has 2 mol of gas. Volume of Y is four times that of X. Pressure in Y is half that in X. What is temperature of gas in Y ---------- temperature of gas in X

A. 2
B. 1
C. 1/2
D. 1/4

An ideal gas at 15.5C and a pressure of 1.72×10^5 Pa occupies a volume of 2.81 m^3. How many moles of gas are present?

A. 31 mol
B. 21 mol
C. 31 mol
D. 200[illegible]

Q.216 An ideal gas at 15.5C and a pressure of 1.72×10^5 Pa occupies a volume of 2.81 m^3 If the volume is raised to 4.16m^3 and the temperature raised to 28.2C, what will be the pressure of the gas?

A. 121×10^5 Pa
B. 1.21 × 105 Pa
C. 1.21 Pa
D. 121 Pa

ANSWER KEY

1	A	21	C	41	B	61	A	81	A	101	C	121	B	141	A	161	C	181	B	201	D
2	A	22	B	42	A	62	D	82	C	102	C	122	C	142	B	162	A	182	A	202	C
3	B	23	B	43	C	63	C	83	A	103	A	123	B	143	D	163	B	183	D	203	A
4	B	24	A	44	C	64	B	84	B	104	B	124	C	144	B	164	D	184	B	204	C
5	B	25	C	45	B	65	D	85	B	105	A	125	B	145	D	165	B	185	C	205	B
6	A	26	B	46	C	66	A	86	B	106	A	126	C	146	C	166	A	186	D	206	C
7	C	27	B	47	A	67	D	87	A	107	C	127	A	147	D	167	A	187	A	207	D
8	B	28	B	48	B	68	C	88	A	108	B	128	A	148	A	168	B	188	D	208	C
9	A	29	A	49	C	69	A	89	A	109	C	129	D	149	D	169	B	189	C	209	C
10	C	30	A	50	B	70	A	90	D	110	C	130	B	150	D	170	C	190	A	210	D
11	C	31	B	51	A	71	C	91	B	111	A	131	D	151	A	171	C	191	B	211	B
12	C	32	C	52	C	72	B	92	A	112	A	132	A	152	B	172	D	192	C	212	B
13	B	33	B	53	D	73	C	93	B	113	A	133	C	153	A	173	A	193	B	213	A
14	B	34	D	54	C	74	D	94	A	114	D	134	D	154	C	174	B	194	D	214	B
15	A	35	B	55	C	75	B	95	C	115	C	135	A	155	B	175	C	195	B	215	C
16	C	36	D	56	D	76	D	96	A	116	C	136	A	156	B	176	C	196	A	216	B
17	A	37	A	57	C	77	C	97	D	117	B	137	C	157	C	177	A	197	D		
18	B	38	C	58	C	78	C	98	B	118	C	138	D	158	B	178	A	198	D		
19	B	39	A	59	B	79	B	99	C	119	C	139	B	159	C	179	D	199	D		
20	A	40	B	60	C	80	B	100	A	120	C	140	A	160	B	180	B	200	B		

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6 TOPIC ELECTROSTATICS

PRACTICE EXERCISE

Q.1 Two same charges are placed a certain distance apart in air. If a brass plate is introduced between them, the force between them will be

A. Increases
B. Decrease
C. Remain same
D. Not predicted

Q.2 If capacitance is 4F and we insert a dielectric medium of permittivity 8 is introduce between the plates of the capacitor, what will be capacitors?

A. 4
B. 8
C. 32
D. None

Q.3 Electric force and electric field intensity for a charge are

A. Parallel to each other
B. Opposite to each other
C. Perpendicular to each other
D. At any orientation

Q.4 Electric fields lines emerge from

A. Negative charge
B. Positive charge
C. Both
D. None

Q.5 A charge Q placed at the centre of two charges + q and + q. the system is in equilibrium then net force experienced by Q.

A. Zero
B. F
C. At equilibrium, net force will be zero
D. F/2

Q.6 In series combination of capacitors

A. $C_1+C_2+C_3$
B. $\frac{C_1C_2}{C_1+C_2}$
C. $\frac{C_1+C_2}{C_1C_2}$
D. $\frac{1}{C_1+C_2+C_3}$

Q.7 Unit of charge

A. Ohm
B. coulomb
C. ampere
D. Tesla

Q.8 Value of Permittivity in Free Space

A. $8.85 \times 10^{-12}\ C^2/Nm^2$
B. $9 \times 10^{9}\ Nm^2/C^2$
C. $8.85 \times 10^{12}\ C^2/Nm^2$
D. $6.67 \times 10^{-11}\ C^2/Nm^2$

Q.9 Work done per unit coulomb is equal to

A. electric field
B. magnetic field
C. electric potential
D. None

Q.10 Electric charges measured by

A. Coulomb
B. Newton
C. Faraday
D. None

Q.11 Work on charge is equipotential surface is

A. +ve
B. -ve
C. Zero
D. None

Q.12 Enormous amount of capacitance is

A. 1 F
B. 3 F
C. 5 F
D. 7 F

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Q.13 Capacitance of spherical capacitor _____ is

A. $4\pi \epsilon_0 R$
B. $2\pi \epsilon_0 R$
C. 4π
D. $4R$

Q.14 A quantity which is related to both N/C and V /m is:

A. Electric intensity
B. Electric force
C. electric charge
D. electric current

Q.15 Two capacitors if we connect in Series are placed in

A. side by side
B. end to end
C. both
D. None of these

Q.16 Change in potential energy per unit charge between two points

A. Potential difference
B. Electric potential
C. electric field
D. potential energy

Q.17 Force exerted by a unit charge is

A. Electric flux density
B. Charge density
C. electric field intensity
D. electric potential

Q.18 parallel plate capacitor capacitance depends

A. dielectric constant
B. Area of each plate
C. Distance between plate
D. All

Q.19 What happen to capacitance when dielectric is introduce?

A. increase
B. decrease
C. remain constant
D. None

Q.20 The unit of capacitance is

A. watt
B. henry
C. farad
D. Joule × meter

Q.21 Force per unit charge is

A. Electric field
B. Electric force
C. Electric Intensity
D. Electric potential

Q.22 The formula of capacitance of parallel plate capacitance

A. $\frac{A\epsilon_0}{d}$
B. $\frac{q}{v}$
C. both
D. None

Q.23 The P.E per unit charge is equal to

A. Potential difference
B. Current
C. electric field intensity
D. potential gradient

Q.24 An isolated parallel plate capacitor is charged upto a certain potential difference. When a 3mm thick slab is introduced between the plates then in order to maintain the same potential difference, the distance between the plates is increased by 2.4mm. Find the dielectric constant of the slab. (assume charge remains constant)

A. 5
B. 4
C. 2
D. 1

Q.25 SI unit of permittivity of free space is

A. C/N-m
B. N-m/c^2
C. C^2/N-m^2
D. C^2/N-m^2

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Q.26 For n numbers of Capacitors, each of the capacitance Is "C" what will be the ratio between maximum and minimum capacitor

A. n
B. n^1
C. n^3
D. n^4

Q.27 An 8microF capacitor is connected in series with a 0.5 mega ohm resistor. The DC voltage supply is 200V. Calculate the time constant.

A. 1s
B. 2s
C. 3s
D. 4s

Q.28 The SI unit of electric intensity

A. volt / metre
B. newton –coulomb
C. volt / metre²
D. volt x metre

Q.29 The force per unit charge is known as

A. Electric flux
B. Electric intensity
C. Electric potential
D. All of above are same

Q.30 An electric field can deflect

A. Neutrons
B. X-rays
C. Both glass rod and silk acquire a negative charge
D. None

Q.31 An electric charge at rest produces

A. Only a magnetic field
B. Only an electric field
C. Neither electric field nor magnetic field
D. Both electric and magnetic fields

Q.32 The units of electric intensity are:

A. Volt / meter or newton / coulomb
B. Volt / meter or meter / coulomb
C. Volt / coulomb or newton / coulomb
D. Joule / meter or newton / coulomb

Q.33 The ratio of electric force to gravitational force ———————— is always:

A. greater than unity
B. less than unity
C. equal to unity
D. zero

Q.34 E=F/q is the formula for?

A. Electrical field strength
B. Electrical field intensity
C. Both of them
D. None of them

Q.35 Force acting on a positive charge is always:

A. in the direction opposite to electric field
B. in the direction of electric field
C. in the direction perpendicular to electric field
D. in the direction perpendicular to the velocity of charge

Q.36 Electric potential difference can be defined as:

A. $\Delta V = \Delta U - q$
B. $\Delta V = \Delta U / q$
C. $\Delta V = \Delta U + q$
D. $\Delta V = \Delta U * q$

Q.37 You have three capacitors, each of 3 μC. In which of the following combinations of the three capacitors, the resultant capacitance is 9μC?

A. all three capacitors in series
B. two capacitors are in series, one in parallel
C. two capacitors are in parallel, one in series
D. all three capacitors in parallel

Q.38 Force on a static charge q in uniform electric field E is

A. qE
B. -qE
C. qE^2
D. $-qE^2$

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Q.39 The study of electric charges at rest in electric field is known as:
A. electromagnetism
B. electrostatics
C. quantum physics
D. magnetism

Q.40 Coulomb's law is true for
A. Atomic distance
B. Nuclear distance
C. Charge as well as uncharged particle
D. All the distances

Q.41 If a particle has charge q is accelerated through a potential difference V., then energy acquired by the particle is:
A. V --- 2
B. V --- q
C. qV ----- 2
D. qV

Q.42 The electric potential difference between two points A and B in an electric field can be defined as:
A. Work do e in carrying a unit positive charge from infinity to B while keeping the charge in equilibrium.
B. work done in carrying a unit positive charge from A to infinity while keeping the charge in equilibrium.
C. work done in carrying a unit positive charge from A to B while keeping the charge in equilibrium.
D. work done in carrying a unit positive charge from A to B

Q.43 The energy stored in a parallel plate capacitor is 24 J. What is the potential difference between the plates if the capacitance of the capacitor is 3 μF
A. 4 kV
B. 16 kV
C. 54 kV
D. 8 kV

Q.44 Farad is defined as:
A. newton / volt
B. coulomb / volt
C. coulomb / joule
D. coulomb / newton

Q.45 A capacitor stores 5.3 x 10^{-5} C of charge when connected to a 6.0-V battery. How much charge does the capacitor store when connected to a 9.0-V battery?
A. 79.5 μC
B. 35.3 μC
C. 79.5 pC
D. 35.3 pC

Q.46 Object A has a charge of 15 mC, and object B has a charge of 10 mC Which statement is true about the electric forces on the objects?
A. FAB = -3 FBA
B. FAB = - FBA
C. 3 FAB = - FBA
D. -3 FAB = 2 FBA

Q.47 Electrostatic force is
A. Nonconservative
B. Conservative
C. depends on shape of charge
D. None of these

Q.48 Consider a negative point charge is moving along a straight-line path directly toward a stationary positive point charge. Which aspect(s) of the electric force on the negative point charge will remain constant as it moves?
A. direction
B. magnitud
C. both direction and magnitude
D. neither direction and magnitude

Q.49 Electric field lines
A. never cross each other
B. can cross each other
C. depends on shape of charge
D. Not enough information

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Q.50 One coulomb charge is carried by:
A. 6.25×10^{-18}
B. one electron
C. one proton
D. 1.6×10^{-19}

Q.51 An electron is held within electric field What happens when electron is released?
A. it moves in the direction of electric field
B. it accelerates in the direction of electric field
C. it moves in the direction opposite to electric field
D. it accelerates in the direction opposite to electric field

Q.52 The force between two charges Q and q, separated by a distance d is F. What will be the force between them when distance between them is d/2?
A. 4F
B. 2F
C. F
D. F/2

Q.53 You have three capacitors, each of 2 μC In which of the following combinations of the three capacitors, the resultant capacitance is 6μC?
A. all three capacitors in series
B. two capacitors are in series, one in parallel
C. two capacitors are in parallel, one in series
D. all three capacitors in parallel

Q.54 Energy stored in a parallel plate capacitor:
A. CV
B. CV^2
C. $\frac{1}{2} CV^2$
D. CV^3

Q.55 A particle carrying a charge 3e, accelerates through a potential difference of 2V. The energy acquired by it is:
A. 6eV
B. 1.5eV
C. 0.66eV
D. 12eV

Q.56 If the magnitude of charges on two-point objects and the distance between them is doubled, then force will be:
A. two times
B. four times
C. unchanged
D. halved

Q.57 The electron volt is the unit of:
A. electric current
B. electric potential
C. electric energy
D. electric flux

Q.58 You have three capacitors and a battery. In which of the following combinations of the three capacitors is the maximum possible energy stored when the combination is attached to the battery?
A. in parallel
B. in series
C. either way because both combinations have the same capacitance
D. we cannot determine, because presence of resistance in the

Q.59 The electric field inside a spherical shell of uniform surface charge density is
A. Zero
B. Infinite
C. Constant less than zero
D. Directly proportional to distance

Q.60 Two-point charges attract each other with an electric force of magnitude F. If the charge on one of the particles is reduced to one-half its original value and the distance between the particles is doubled, what is the resulting magnitude of the electric force between them?
A. F
B. F/2
C. F/4
D. F/8

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Q.61 A positive point charge q1 creates an electric field of magnitude E1 at a spot located at a distance r1 from the charge. The charge is replaced by another positive point charge q2, which creates a field of magnitude E2 = E1 at a distance of r2 = 2r1. How is q1 related to q2?

A. q2 = 4 q1
B. q2 = 2 q1
C. q2 = 0.5 q1
D. q2 = 0.25 q1

Q.62 The value of coulomb constant is:

A. 9×10^{9} Nm
B. 9×10^{9} Nm^2/C^2
C. 9×10^{-9} Nm^2/C^2
D. $9 \times 10^{-9} Nm^2$

Q.63 A capacitor stores charge Q at a potential difference ΔV. What happens if the voltage applied to the capacitor by a battery is doubled to 2 ΔV?

A. the capacitance falls to half its initial value, and the charge remains the same
B. the capacitance and the charge both fall to half their initial values
C. the capacitance and the charge both double
D. the capacitance remains the same, and the charge Doubles

Q.64 Electric intensity at the centre of uniformly distributed charge is

A. Zero
B. Kq/r^2
C. q/r^2
D. q/ε

Q.65 A charge is moving with velocity v, it enters a uniform magnetic field B The direction of v is perpendicular to B What is the path of the charge particle inside the magnetic field?

A. parabolic
B. circular
C. parallel to v
D. parallel to E

Q.66 A capacitor can store its energy in its:

A. magnetic field
B. parallel plate
C. electric field
D. coil

Q.67 The electric potential at infinite distance is:

A. infinity
B. zero
C. positive
D. negative

Q.68 If the potential difference across the two plates of a parallel plate capacitor is doubled, then energy stored in the capacitor would be:

A. remains same
B. two times
C. four times
D. three times

Q.69 If peak Voltage across a full wave rectifier is 20V then V_{rms} is

A. 7.07
B. 14.14 v
C. 16.8V
D. 12V

Q.70 The units of electric intensity are:

A. Volt / meter or newton / coulomb
B. Volt / meter or meter / coulomb
C. Volt / coulomb or newton / coulomb
D. Joule / meter or newton / coulomb

Q.71 E = F/q is the formula for?

A. Electrical field strength
B. Electrical field intensity
C. Both of them
D. None of them

Q.72 Force acting on a positive charge is always:

A. In the direction opposite to electric field
B. In the direction of electric field
C. In the direction perpendicular to electric field
D. In the direction perpendicular to the velocity of charge

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Q.73 Electric potential difference can be defined as:

A. $\Delta V = \Delta U - q$
B. $\Delta V = \Delta U / q$
C. $\Delta V = \Delta U + q$
D. $\Delta V = \Delta U * q$

Q.74 Force on a static charge q in uniform electric field E is

A. qE
B. -qE
C. qE^2
D. $-qE^2$

Q.75 Like charges

A. Attract each other
B. Repel each other
C. Both A and B
D. Some time attract and some time repel each other

Q.76 The coulomb constant is defined as:

A. $1 / (4\pi)$
B. $4 / (\pi)$
C. 4π
D. $\pi / (4)$

Q.77 Consider two capacitors with capacitance 2μF and 4μF. With which type of connection will the 2μF capacitor have a greater amount of stored energy than the 4μF capacitor?

A. series
B. Parallel
C. Either series nor parallel
D. Neither series nor parallel

Q.78 Energy stored in a parallel plate capacitor:

A. CV
B. CV^2
C. ½ CV
D. ½ CV^2

Q.79 A particle carrying a charge 3e, accelerates through a potential difference of 2V. The energy acquired by it is:

A. 6eV
B. 1.5eV
C. 0.66eV
D. 12eV

Q.80 If the magnitude of charges on two-point objects and the distance between them is doubled, then force will be:

A. Two times
B. Four times
C. Unchanged
D. Halved

Q.81 You have three capacitors and a battery. In which of the following combinations of the three capacitors is the maximum possible energy stored when the combination is attached to the battery?

A. In parallel
B. In series
C. Either way because both combinations have the same capacitance
D. We cannot determine, because presence of resistance in the

Q.82 The electric field inside a spherical shell of uniform surface charge density is

A. Zero
B. Infinite
C. Constant less than zero
D. Directly proportional to distance

Q.83 The electric field intensity at infinite distance from point charge is

A. Infinite
B. Zero
C. Positive
D. Negative

Q.84 Electric intensity at the centre of uniformly distributed charge is

A. Zero
B. Kq/r^2
C. q/r^2
D. q/ε

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Q.85 A charge is moving with velocity v, it enters a uniform magnetic field B. The direction of v is perpendicular to B. What is the path of the charge particle inside the magnetic field?

A. Parabolic
B. Circular
C. Parallel to v
D. Parallel to E

Q.86 If two-point charges of charge q_1 and q_2 are placed at distance d. The force between them is proportional to:

A. d
B. d^2
C. 1/d
D. 1 /d2

Q.87 You have two identical capacitors. They can be connected in series or in parallel. If you want the smallest equivalent capacitance for the combination, how should you connect them?

A. In parallel
B. In series
C. Either way because both combinations have the same capacitance
D. We cannot determine, because presence of resistance in the circuit determines capacitance

Q.88 Which of the following statements is correct? The electric field at a point is:

A. Continuous if there is a charge at that point
B. Always continuous
C. Discontinuous only if there is a negative charge at that point
D. Discontinuous if there is a charge at that point

Q.89 The unit of electric flux density is:

A. N/C
B. V/m
C. Nm
D. A and B

Q.90 A capacitor of capacitance C is connected with resistance R. The time constant of the circuit would be:

A. RC
B. R / C
C. eRC
D. R+C

Q.91 The speed v of the waves in the string depends upon the tension F of the string and m, the mass per unit length of the string. It is given by:

A. v2 = F/m
B. v = F/m
C. v*m = F
D. v = F * m

Q.92 1 volt =

A. JC^{-1}
B. JC
C. CJ^{-1}
D. $J^{-1}C^{-1}$

Q.93 What is the change in kinetic energy of a proton when it is accelerated through a potential difference of 2MV?

A. 0.32 μJ
B. 0.32 nJ
C. 0.32 pJ
D. 0.32 Fj

Q.94 The energy stored in a parallel plate capacitor is 3J. What is the capacitance of the capacitor if the potential difference between the plates is 220V?

A. 124μF
B. 660 μF
C. 75 μF
D. 124 mF

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Q.95 The capacitance of a capacitor is a measure of its ability to:

A. Store charge
B. Store electric field
C. Gain potential difference
D. Store magnetic field

Q.96 Electric potential difference between the two points can be defined as:

A. Difference of the kinetic energy per unit charge
B. Difference of the kinetic energy
C. Difference of the potential energy per unit charge
D. Difference of the potential energy

Q.97 You have three capacitors, each of 2 μC. In which of the following combinations of the three capacitors, the resultant capacitance is 3μC?

A. All three capacitors in series
B. Two capacitors are in series, one in parallel
C. Two capacitors are in parallel, one in series
D. All three capacitors in parallel

Q.98 Many computer keyboard buttons are constructed using capacitors. When a key is pushed down, the soft insulator between the movable plate and the fixed plate is compressed. When the key is pressed, what happens to the capacitance?

A. It increases
B. It decreases
C. It remains same
D. It changes in a way you cannot determine because of the complex circuit

Q.99 The minimum charge on an object cannot be less than:

A. 1.6×10^{-19} C
B. $9 \times 10^{\wedge 9}$ C
C. 9.1×10^{-31} C
D. 1.6×10^{-27}C

Q.100 Time constant is defined as the time required by the capacitor:

A. To deposit 63% of the equilibrium charge
B. To deposit 36% of the equilibrium charge
C. To deposit 63 times of the equilibrium charge
D. To deposit 36 times of the equilibrium charge

Q.101 The unit of electric field strength is:

A. V / C
B. N / C
C. N / V
D. N m

Q.102 The electric potential at a point in an electric field can be defined as:

A. Work done in bringing a unit positive charge from infinity to that point
B. Work done in bringing a unit positive charge from infinity to that point while keeping the charge in equilibrium
C. Work done in bringing a unit negative charge from infinity to that point while keeping the charge in equilibrium
D. Work done in bringing a unit negative charge from infinity to that point

Q.103 The value of permittivity of material, other than air or space is:

A. Greater than unity
B. Less than unity
C. Equal to unity
D. Zero

Q.104 The value for r for air is:

A. 1.6
B.1.06
C.1.006
D.1.0006

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Q.105 The force between two charges Q and q, separated by a distance d is F. What will be the force between 4Q and q/2?

A. 2F
B. 4F
C. F
D. F /2

Q.106 Which one is the correct statement about selenium?

A. Selenium is a good conductor
B. Selenium is a good insulator
C. Selenium is an insulator in the dark and becomes conductor when exposed to light
D. Selenium is an conductor in the dark and becomes insulator when exposed to light

Q.107 The distance between two point charges if halved, the force between them would be:

A. Half
B. Double
C. One fourth
D. Four times

Q.108 The electric intensity between two oppositely charged electric plates is:

A. $\frac{\sigma}{2\epsilon_0}$
B. $\frac{\sigma}{\epsilon_0}$
C. $\frac{4\sigma}{\epsilon_0}$
D. $\frac{2\sigma}{\epsilon_0}$

Q.109 Three objects are brought close to each other, two at a time. When objects A and B are brought together, they repel. When objects B and C are brought together, they also repel. Which of the following are true?

A. Objects A and C possess charges of the same sign, but not B
B. Objects A and C possess charges of opposite sign
C. All three objects possess charges of the same sign
D. One object is neutral

Q.110 Two equal and opposite charges separated by a small distance are said to constitute:

A. A magnetic dipole
B. An electric dipole
C. A couple
D. An ion

Q.111 What is the formula for Coulomb's law?

A. F=Kq1q2/r2
B. F=2Kq1q2/r3
C. F=Kq1/r
D. F=Kq1/q2

Q.112 Electric field lines provide information about

A. Field strength
B. Direction
C. Nature of charge
D. All of these

Q.113 Three objects are brought close to one another, two at a time. When objects A and B are brought together, they attract. When objects B and C are brought together, they repel. Which of the following are necessarily true?

A. Objects A and C possess charges of the same sign
B. Objects A and C possess charges of opposite sign
C. All three objects possess charges of the same sign
D. Additional experiments must be performed to determine information about the charges on the objects

Q.114 Two-point charges are at the distance d. If force between these two charges is F, then what is the force between charges when the distance between them is 3d?

A. F /3
B. F / 9
C. F /3 d
D. F / 9 d

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Q.115 A negative point charge is moving along a circular orbit around a positive point charge.
Which aspect(s) of the electric force on the negative point charge will remain constant as it moves?
A. Direction
B. Magnitude
C. Both direction and magnitude
D. Neither direction and magnitude

Q.116 A proton has mass m and charge q. It is suspended in electric and gravitational field. What is the magnitude of electric field?
A. E = mxg/ q
B. E = mxg/qxv
C. E = mxg /qxvxB
D. E = q / mxg

Q.117 The greek word "xeros" and "graphos" means:
A. Sharp graphics
B. Dry writing
C. Wet writing
D. Wet graphics

Q.118 Electric intensity and electric potential are related as:
A. Electric field intensity is equal to the negative of the gradient of electric potential
B. Electric field intensity is equal to the gradient of electric potential
C. Electric field intensity is equal to the square of the gradient of electric potential
D. Electric field intensity is equal to the twice of the gradient of electric potential

Q.119 An object has mass and charge. It is moving in the direction of some field. Which type of field exerts a force on the object?
A. electric and magnetic fields only
B. magnetic and gravitational fields only
C. electric and gravitational fields only

Q.120 An 18.0 V battery is connected to a capacitor, resulting in 27.0 μC of charge stored on the capacitor. How much energy is stored in the capacitor?
A. 2.43×10^{-4} J
B. 4.86×10^{-4} J
C. 2.43×10^{-2} J
D. 4.86×10^{-2} J

Q.121 The value of K depends upon
A. Charges
B. System of units and medium
C. The distance between charges
D. Nature of medium

Q.122 Consider a charge q is placed in a region where both electric and magnetic fields are present. The charge will experience:
A. Both electric and magnetic forces
B. Only electric force
C. Only magnetic force
D. No force at all

Q.123 Jolule / coulomb is unit of:
A. Electric potential difference
B. Electric field strength
C. Magnetic field strength
D. Energy

Q.124 Electric field at a point varies as r^0 for
A. A plane infinite sheet of charge
B. A point charge
C. Electric dipole
D. Line charge of infinite length

Q.125 What is the energy stored in a capacitor of capacitance 2 μF and potential difference between the plates is 12V?
A. 12×10^{-6} J
B. 24×10^{-6} J
C. 144×10^{-6} J
D. 1/6 J

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Q.126 If two-point charges of charge q_1 and q_2 are placed at distance d. The force between them is proportional to:

A. $q_1 + q_2$
B. $q_1 - q_2$
C. q_1 / q_2
D. $q_1 \times q_2$

Q.127 Which two or more of the following actions would increase the energy stored in a parallel plate capacitor when a constant potential difference is applied across the plates?

A. Decreasing the area of the plates Decreasing the separation between the plates
B. Decreasing the area of the plates Increasing the separation between the plates Inserting a dielectric between the plates
C. Increasing the area of the plates Decreasing the separation between the plates Inserting a dielectric between the plates
D. Increasing the area of the plates Increasing the separation between the plates

Q.128 Electric field at the centre of square when 1μC charge are placed at its each corner is

A. Zero
B. 2 Volt/m
C. 2 Volt/m
D. 4 Volt/m

Q.129 A test charge of 23 μC is at a point P where an external electric field is directed to the left and has a magnitude of 3.1 x10^6 N/C. If the test charge is replaced with another test charge of 13 μC, what happens to the external electric field at P?

A. It remains same
B. It reverses direction
C. It changes in a way that cannot be determined
D. 3.1×10^5 N/C

Q.130 For static electric field

A. $\nabla \times E=0$
B. $\nabla . E=0$
C. $(\nabla \times E) \times E=0$
D. $\nabla . |E|^2=0$

Q.131 Three charges + 3q + q and Q are placed on a straight line with equal separation. In order to make the net force on q to be zero, the value of Q will be

A. 3q
B. 2q
C. 4q
D. 5q

Q.132 Consider a capacitor has vacuum in the space between the conductors. If we double the amount of charge on each conductor, what happens to the capacitance?

A. It increases
B. It decreases
C. It remains same
D. It depends on the size or shape of the conductors

Q.133 The minimum indivisible unit of charge is:

A. One coulomb
B. Charge on one alpha particle
C. Charge on one proton
D. One micro coulomb

Q.134 The presence of dielectric between two charged particles:

A. Reduces the electrostatic force
B. Increases the electrostatic force
C. Does not change electrostatic force
D. Doubles the electrostatic force

Q.135 The number of electrons taken out from a body to produce 1 coulomb of charge will be

A. 6.25×10^{18}
B. 625×10^{18}
C. 6.023×10^{23}
D. None of these

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Q.136 Electric field lines due to a negative charge are:
A. Always horizontal
B. Always vertical
C. Radially towards the charge
D. Radially away from the charge

Q.137 A charge is moving with velocity v, it enters a uniform electric field E. The direction of v and E are not parallel. What is the path of the charge particle inside the electric field?
A. Parabolic
B. Circular
C. Parallel to v
D. Parallel to E

Q.138 A particle having the charge of 20 electrons on its falls through a potential difference of 100volts. Calculate the energy acquired by it in electron volt (eV).
A. 2.0×10^{-2} eV
B. 2.0×10^{-3} eV
C. 2.0×10^{2} eV
D. 2.0×10^{3} eV

Q.139 A particle carrying a charge 3e, accelerates through a potential difference of 2V. The energy acquired by it is:
A. 1.6×10^{-19} J
B. 9.6×10^{-19} J
C. 9.6×10^{-18} J
D. 1.6×10^{-18} J

Q.140 Force on a static charge q in uniform electric field E is
A. qE
B. –qE
C. qE^2
D. –qE^2

Q.141 Electric potential difference between the two points can be defined as:
A. Difference of the kinetic energy per unit charge
B. Difference of the kinetic energy
C. Difference of the potential energy per unit charge
D. Difference of the potential energy

Q.142 Negative of potential gradient is equal to:
A. Electricity intensity
B. Electric flux
C. Magnetic intensity
D. Magnetic flux

Q.143 A charge of 2 C placed in electric field of 10 N/C what will be the work done in moving charge a distance of 5 m
A. 100 J
B. 50 J
C. 150 J
D. 200 J

Q.144 Coulomb's law is only applicable for
A. Big charges
B. Small charges
C. Point charges
D. Any charges

Q.145 Electric field lines from a point charge _____ each other
A. Converges towards
B. Diverges away from
C. Remain equispaced with
D. None of these

Q.146 Find the electric field strength required to hold suspended a particle of mass 10^{-6}kg and charge 1.0μC between two plates 10.0 cm apart.
A. 0.98 V/m
B. 980 V/m
C. 9.8 V/m
D. 98 V/m

Q.147 Electric field at the centre of square when 1μC charge are placed at its each corner is
A. Zero
B. 2 Volt/m
C. 2 Volt/m
D. 4 Volt/m

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Q.148 Consider two capacitors with capacitance 2μF and 4μF. With which type of connection will the 4μF capacitor have a greater amount of stored energy than the 2μF capacitor?

A. Series
B. Parallel
C. Either series nor parallel
D. Neither series nor parallel

ANSWER KEY

1	B	21	C	41	D	61	A	81	A	101	B	121	B	141	C
2	C	22	A	42	C	62	B	82	A	102	B	122	B	142	A
3	A	23	A	43	A	63	D	83	B	103	A	123	A	143	A
4	B	24	A	44	B	64	A	84	A	104	D	124	A	144	C
5	A	25	C	45	A	65	B	85	B	105	A	125	C	145	B
6	B	26	A	46	B	66	C	86	D	106	C	126	D	146	C
7	B	27	D	47	B	67	B	87	B	107	D	127	C	147	A
8	A	28	A	48	A	68	C	88	D	108	B	128	A	148	B
9	C	29	B	49	A	69	B	89	D	109	C	129	A		
10	A	30	D	50	A	70	A	90	A	110	B	130	A		
11	C	31	B	51	D	71	C	91	A	111	A	131	A		
12	A	32	A	52	A	72	B	92	A	112	D	132	C		
13	A	33	A	53	D	73	B	93	C	113	D	133	C		
14	A	34	C	54	C	74	A	94	A	114	B	134	A		
15	B	35	B	55	A	75	B	95	A	115	B	135	A		
16	A	36	B	56	C	76	A	96	C	116	A	136	C		
17	C	37	D	57	C	77	A	97	B	117	B	137	A		
18	D	38	A	58	A	78	D	98	A	118	A	138	D		
19	A	39	B	59	A	79	A	99	A	119	C	139	B		
20	C	40	A	60	D	80	C	100	A	120	A	140	A		

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7 TOPIC CURRENT ELECTRICITY

PRACTICE EXERCISE

Q.1 Resistance of human body

A. 12 ohm
B. 120 ohm
C. 20 ohm
D. 120 kohm

Q.2 Conductivity depend on

A. Temperature and nature of material
B. Length
C. Area
D. All.

Q.3 A load of resistance 0.04 Ω is attached to the cell having E.M.F 1.5 V and 15 A is drawn in the circuit. The internal resistance of cell will be

A. 0.6 Ω
B. 0.06 Ω
C. 6 Ω
D. 0.3 Ω

Q.4 Resistivity depends upon

A. Nature
B. Temperature
C. Both
D. None

Q.5 Resistance depends upon

A. Length
B. Area
C. Temperature
D. All of these

Q.6 Ohm's law is valid at?

A. Constant Temperature
B. Variable Temperature
C. All kind of temperature
D. None

Q.7 Electrical power deliver by the source.

A. VI
B. FV
C. $\frac{\text{work}}{t}$
D. none

Q.8 Bulb Having Current 200A, and Voltage 220 find Power

A. 22kw
B. 44kw
C. 44watt
D. 40 kw

Q.9 Ohm's law is not valid for:

A. semiconductors
B. Filament bulb
C. copper
D. both a and b

Q.10 $Req = R_1 + R_2 + R_3 + \ldots\ldots + Rn$ is for which combination?

A. Series
B. parallel
C. both
D. None

Q.11 Steady current does not change with respect to:

A. time
B. voltage
C. ions
D. temperature

Q.12 A heater of 400 Watt was on for 5 hours what is electrical Consumption

A. 20KwH
B. 12 KWH
C. 2KWH
D. None

Q.13 The unit of power is

A. watt × second
B. Joule
C. Joule × second
D. watt

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Q.14 Find potential difference when resistance is 40ohm and Current is 300 Amp
A. 12000 V
B. 10000 V
C. 6000 V
D. 3000 V

Q.15 Potentiometer is used to
A. to compare potential difference
B. To measure potential difference
C. both a and b
D. to measure the current

Q.16 Which of the following bulb has least resistance:
A. 50 W
B. 100 W
C. 200 W
D. 300 W

Q.17 Conductivity is the reciprocal of
A. Resistance
B. Resistivity
C. Capacitance
D. Magnetic field

Q.18 When a wire is compressed and its radius becomes 2R Then its resistance will be
A. 16R
B. 4R
C. 2R
D. R/16

Q.19 The resistances of a wire at temperatures t∘Cand 0∘Care related by
A. $Rt=R_0(1+\alpha t)$
B. $Rt=R_0(1-\alpha t)$
C. $Rt=R_0^2(1+\alpha t)$
D. $Rt=R_0^2(1-\alpha t)$

Q.20 The resistance of a coil is 4.2 ohm at 100° C and the temperature coefficient of resistance of its material is 0.004/°C. Its resistance at 0oC
A. 6.5 ohm
B. 5 ohm
C. 3 ohm
D. 4 ohm

Q.21 What is the relationship between resistance and current?
A. They are directly related to each other.
B. They are inversely related to each other.
C. The resistance has a greater magnitude than current.
D. The current has a greater magnitude than resistance.

Q.22 How much more heat is produced, if the current is doubled?
A. twice the original amount
B. thrice the original amount
C. four times the original amount
D. five times the original amount

Q.23 Which of the following represents voltage?
A. Work done / Current×Time
B. Work done × Charge
C. Work done×Time / Current
D. Work done × Charge × Time

Q.24 In order to reduce electricity consumption at home, what kind of appliance should one purchase?
A. one which draws low power
B. one which produces less heat
C. one which operates at a higher voltage
D. one which draws a high amount of current

Q.25 If I, R and t are the current, resistance and time respectively, then according to Joule's law heat produced will be proportional to
A. I^2Rt
B. I^2Rf
C. I^2R^2t
D. $I^2R^2t^2$

Q.26 Specific resistance of all metals is mostly affected by
A. temperature
B. pressure
C. magnetic field
D. volume

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Q.27 1 Watt =
A. 1 VA
B. 1V/A
C. 1A/V
D. 1/AV

Q.28 The length and radius of an electric resistance of a certain wire are doubled simultaneously, then the:
A. resistance will be doubled and specific resistance will be halved
B. resistance will be halved and specific resistance will remain uncharged
C. resistance will be halved and the specific resistance will be doubled
D. resistance and specific resistance will both remain uncharged

Q.29 Calculate the time taken for the charges to complete the circuit if the total charges were 5000 Coulomb and the current of the circuit was 20 Amp?
A. 250 seconds
B. 350 seconds
C. 400 seconds
D. 500 seconds

Q.30 SI Unit of potential difference is?
A. Coulomb
B. Volts
C. Ampere
D. newton's Meter

Q.31 The resistance and length of wire are
A. inversely related
B. directly related
C. not related
D. inversely proportional

Q.32 A potentiometer is used to measure the emf of a cell. At null point, no current flows through_____
A. The main circuit
B. the cell circuit
C. both the main and cell circuits
D. the potentiometer wire

Q.33 The graphical representation of Ohm's law is
A. Hyperbola
B. Ellipse
C. Parabola
D. Straight line

Q.34 Two copper conductors have equal length. The cross-sectional area of one conductor is four times that of the other. If the conductor having smaller cross-sectional area has a resistance of 40 ohms the resistance of another conductor will be
A. 160 ohm
B. 80 ohm
C. 20 ohm
D. 10 ohm

Q.35 A galvanometer acting as a voltmeter will have a coil with
A. a high resistance in parallel
B. a high resistance in series
C. a low resistance in parallel
D. a low resistance in series

Q.36 Find the current if power given is 5 Watts and voltage is 0.5 volts.
A. 10 Amp
B. 20 Amp
C. 30 Amp
D. 50 Amp

Q.37 When bulb is turned on, ohm's law is applicable
A. Yes
B. No
C. partly
D. None of these

Q.38 Which one of the following is a disadvantage of a potentiometer over a voltmeter?
A. it can measure the internal resistance of a cell
B. it can measure the e.m.f. of a cell
C. it is heavy and not portable
D. it can measure accurately very small PD of the ord of few microvolt

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Q.39 Value of current in a short circuit is _____

A. Infinite
B. zero
C. minimum
D. maximum

Q.40 What is the relationship between Power, Current and Resistance?

A. $P=I^2R$
B. $P=I^2R/2$
C. $P=IR$
D. All of them

Q.41 The fractional change in resistance per kelvin is known as

A. coefficient in resistance
B. temperature coefficient of resistance
C. resistance
D. None of these

Q.42 If a current of 5 Amperes flows through the conductor. The number of electrons per second will is:

A. 1.6×10^{-19}
B. 3.12×10^{19}
C. 4×10^{19}
D. 7.68×10^{20}

Q.43 A resistance of 40 Ohms is attached to a circuit having current of 300 Amp, Find its voltage.

A. 12000 volts
B. 15000 volts
C. 20000 volts
D. 300 volts

Q.44 A 200watt bulb operates in a 220V circuit. Find the current.

A. 0.9 Amp
B. 0.6 Amp
C. 2 Amp
D. 3 Amp

Q.45 A current of 5A flows in a resistor of 2 ohms. Calculate the energy dissipated in 300 seconds in the resistor.

A. 5KJ
B. 10KJ
C. 15KJ
D. 20 KJ

Q.46 Calculate the work done in a resistor of 20 ohm carrying 5A of current in 3 hours.

A. 1KWh
B. 1.5KWh
C. 2KWh
D. 3KWh

Q.47 Maximum power is delivered when internal resistance of the source equals

A. zero resistance
B. load resistance
C. max resistance
D. None of these

Q.48 Resistance of a material always decreases if

A. Temperature of material is decreased
B. Temperature of material is increased
C. Number of free electrons available becomes more
D. None of the above is correct

Q.49 1 microvolt is

A. 1×10^{-3} V
B. 1×10^{-4} V
C. 1×10^{-5} V
D. 1×10^{-6} V

Q.50 4000 Coulomb charges were passing from the wire for about 12 seconds. Estimate the current during this process?

A. 333.3 ampere
B. 333.33 volts
C. 666.67 ampere
D. None of them

Q.51 Calculate the charge passing through the circuit if it's current it 10 Amp and the recorded time is 15 seconds

A. 1500 Coulomb
B. 150 Coulomb
C. 3400 Coulomb
D. 140 Coulomb

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Q.52 1 kilo ohm = _____ ohm
A. 10^3 ohm
B. 10^7 ohm
C. 10^4 ohm
D. None of them

Q.53 An apparatus which is used to measure current voltage and resistance
A. Multimeter
B. Ammeter
C. Galvanometer
D. Voltmeter

Q.54 As compared to thin wires, thick wires have
A. more resistance
B. no resistance
C. less resistance
D. same resistance

Q.55 The circuit which gives continuously varying potential is called
A. Complex network
B. Wheatstone bridge
C. Potential divider
D. All of above

Q.56 A potential difference of 10 V is applied across a conductor whose resistance is 2.5ohm. What is the value of current flowing through it?
A. 4A
B. 2A
C. 6A
D. 10A

Q.57 Electric current may be defined as
A. Rate of flow of charge
B. Rate of flow of momentum
C. Rate of flow of power
D. None of them

Q.58 Volts / Ampere = _____
A. Ohm
B. Ohm meter
C. Pascal
D. None of them

Q.59 Two incandescent light bulbs of 40 W and 60 W ratings are connected in series across the mains. Then
A. The bulbs together consume 100 W
B. The bulbs together consume 50 W
C. The 60 W bulb glows brighter
D. The 40 W bulb glows brighter

Q.60 When 2Ω, 4Ω and 6Ω resistors are connected in parallel their resultant equivalent resistance will be:
A. 12Ω
B. 11/12Ω
C. 12/11Ω
D. Data is insufficient

Q.61 Correct form of ohm's law:
A. I = VR
B. V ∝ I
C. V = IR
D. Both B and C

Q.62 Four wires of same material, the same cross-sectional area and the same length when connected in parallel give a resistance of 0.25 ohms. If the same four wires are connected is series the effective resistance will be:
A. 1 ohm
B. 2 ohm
C. 3 ohm
D. 4 ohm

Q.63 Basically a potentiometer is a device for
A. Comparing two voltages
B. Measuring a current
C. Comparing two currents
D. Measuring a resistance

Q.64 The length of a conductor is halved. Its resistance will be:
A. halved
B. doubled
C. unchanged
D. quadrupled

Q.65 A neon flashlight cell with an emf of 1.5V gives a current of 15A when connected directly to an ammeter of resistance 0.04Ω. The internal resistance of the cell is

A. 0.0004Ω
B. 0.06Ω
C. 0.10Ω
D. 0.13Ω

Q.66 Two wires of copper are of the same length but 'have different diameters. When they are connected in series across a battery, the heat generated is H1 When connected in parallel across the same battery, the heat generated during the same time is H2 Then:

A. H1 = H2
B. H1 < H2
C. H1 > H2
D. all are possible

Q.67 A wire has a resistance of 5.5 Ω at 19°C and 21.5 Ω at 200°C Find the temperature coefficient of resistivity(α) of the material.

A. 0.016 per degree Celsius
B. 32 per degree celsius
C. 0.018 per degree celsius
D. 0.00106 per degree Celsius

Q.68 A wire of uniform area of cross-section A and length L is cut into two equal parts, the resistivity of each part is:

A. Doubled
B. Half
C. Remains the same
D. increase three times

Q.69 Which one of the following does not have negative temperature coefficient?

A. Aluminium
B. Paper
C. Rubber
D. Mica

Q.70 Reciprocal of resistivity is called

A. Resistance
B. Inductance
C. Conductivity
D. Flexibility

Q.71 Find the resistance if voltage of the circuit is 45 volts and current 30 Amp?

A. 1.6 ohm
B. 1.5 ohm
C. 1.7 ohm
D. 1.8 ohm

Q.72 An electrical instrument which is used to measure potential difference between two points is called:

A. Barometer
B. Manometer
C. Galvanometer
D. Voltmeter

Q.73 An electric filament bulb can be worked from

A. DC supply only
B. AC supply only
C. Battery supply only
D. All above

Q.74 PD stands for

A. Potential difference
B. Potential deviation
C. Power difference
D. Power dissipated

Q.75 In parallel combination of resistors, voltage remains?

A. Same
B. Different
C. Both of them
D. None of them

Q.76 Which of the following has a negative temperature coefficient of resistance?

A. Tungsten
B. Carbon
C. Nichrome
D. Platinum

Q.77 Emf becomes equal to terminal potential difference when

A. circuit is closed
B. current is max
C. circuit is open
D. all of these

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Q.78 When the length of the conductor is doubled and the area of cross-section remains the same then is resistance

A. Remains the same
B. Will be doubled
C. Will become half
D. Will increase by four times

Q.79 Resistivity of a wire is ___ ohm-m if 0.75 A current flows through it by applying 1.5V potential difference, take length and cross section as 5m and 2.5 x 10-7 m2.

A. 1×10^{-7}
B. 2.63×10^{-8}
C. 19×10^{-8}
D. 7.85×10^{-8}

Q.80 _____ relationship exists between current and voltage in terms of Ohm's law.

A. Non linear
B. Varying
C. Linear
D. None of them

Q.81 If I, R and t are the current, resistance and time respectively, then according to Joule's law heat produced will be proportional to

A. I^2Rt
B. I^2Rt
C. I^2R^2t
D. $I^2R^2t^2$

Q.82 Specific resistance of all metals is mostly affected by

A. Temperature
B. Pressure
C. Magnetic field
D. Volume

Q.83 The length and radius of an electric resistance of a certain wire are doubled simultaneously, then the:

A. Resistance will be doubled and specific resistance will be halved
B. Resistance will be halved and specific resistance will remain uncharged
C. Resistance will be halved and the specific resistance will be doubled
D. Resistance and specific resistance will both remain uncharged

Q.84 Calculate the time taken for the charges to complete the circuit if the total charges were 5000 Coulomb and the current of the circuit was 20 Amp?

A. 250 seconds
B. 350 seconds
C. 400 seconds
D. 500 seconds

Q.85 The resistance and length of wire are

A. Inversely related
B. Directly related
C. Not related
D. Inversely proportional

Q.86 A potentiometer is used to measure the emf of a cell. At null point, no current flows through_____

A. The main circuit
B. The cell circuit
C. Both the main and cell circuits
D. The potentiometer wire

Q.87 A galvanometer acting as a voltmeter will have a coil with

A. A high resistance in parallel
B. A high resistance in series
C. A low resistance in parallel
D. A low resistance in series

Q.88 Ohm's law is applicable to

A. Semiconductors
B. Vacuum tubes
C. Carbon resistors
D. None of these

Q.89 Find the current if power given is 5 Watts and voltage is 0.5 volts.

A. 10 Amp
B. 20 Amp
C. 30 Amp
D. 50 Amp

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Q.90 Which one of the following is a disadvantage of a potentiometer over a voltmeter?
A. It can measure the internal resistance of a cell
B. It can measure the e.m.f. of a cell
C. It is heavy and not portable
D. It is heavy and portable

Q.91 Value of current in a short circuit is _____
A. Infinite
B. Zero
C. Minimum
D. Maximum

Q.92 What is the relationship between Power, Current and Resistance?
A. $P=I^2R$
B. $P=I^2R/2$
C. $P=IR$
D. All of them

Q.93 The fractional change in resistance per kelvin is known as
A. Coefficient in resistance
B. Temperature coefficient of resistance
C. Resistance
D. None of these

Q.94 A resistance of 40 Ohms is attached to a circuit having current of 300 Amp, Find its voltage.
A. 12000 volts
B. 15000 volts
C. 20000 volts
D. 300 volts

Q.95 A 200 watt bulb operates in a 220V circuit. Find the current.
A. 0.9 Amp
B. 0.6 Amp
C. 2 Amp
D. 3 Amp

Q.96 A current of 5A flows in a resistor of 2 ohms. Calculate the energy dissipated in 300 seconds in the resistor.
A. 5KJ
B. 10KJ
C. 15KJ
D. 20 KJ

Q.97 Calculate the work done in a resistor of 20 ohm carrying 5A of current in 3 hours.
A. 1KWh
B. 1.5KWh
C. 2KWh
D. 3KWh

Q.98 Four wires of same material, the same cross-sectional area and the same length when connected in parallel give a resistance of 0.25 ohms. If the same four wires are connected is series the effective resistance will be:
A. 1 ohm
B. 2 ohm
C. 3 ohm
D. 4 ohm

Q.99 A light bulb draws 300 mA when the voltage across it is 240 V. The resistance of the light bulb is:
A. 400-ohm
B. 600 ohm
C. 800-ohm
D. 1000 ohm

Q.100 The battery of a pocket calculator supplies 0.35A at a potential difference of 6 volts. What is the power of the calculator?
A. 9 Watt
B. 2.1 Watt
C. 4 Watt
D. 7 Watt

Q.101 If a cell of emf 2V and internal resistance 0.5 ohm is connected across a resistance R, the current that flows is same as that when a cell of emf 1.5 V and internal resistance 0.3 ohm is connected across the same resistor. Then R=_____Ohm.
A. 0.3
B. 0.6
C. 0.5
D. 0.75

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102 The heat sensitive device whose resistivity changes very rapidly with change of temperature is called a:

A. Resistor
B. Super-conductor
C. Thermocouple
D. Thermistor

Q.103 Resistivity of a wire is ____ ohm-m if 0.75 A current flows through it by applying 1.5 V potential difference, take length and cross section as 5m and 2.5×10^{-7} m²,

A. 1×10^{-7}
B. 2.63×10^{-8}
C. 19×10^{-8}
D. 7.85×10^{-8}

Q.104 Maximum power delivered by battery is:

A. Pmax= $E^2/4r$
B. Pmax = $4rE^2$
C. Pmax = VIT
D. Unlimited

Q.105 The sensitivity of a potentiometer can be increased by:

A. Increasing the e.m.f. of the primary cell
B. Increasing the potential gradient
C. Increasing the length of the potentiometer wire
D. Decreasing the length of the potentiometer wire

Q.106 The specific resistance of a rod of copper as compared to that of thin wire of copper is:

A. Less
B. More
C. Same
D. Depends upon the length and area of cross-section of the wire

Q.107 Which one of the following bulbs has the least resistance?

A. 100W
B. 200W
C. 300W
D. 60W

Q.108 The current passing through a conductor is directly proportional to the potential difference applied across its terminals, provided the temperature and other physical conditions of the conductor does not change:

A. Gauss's law
B. Lenz law
C. Pascal's law
D. Ohm's law

Q.109 In order to achieve high accuracy, the slide wire of a potentiometer should be:

A. As long as possible
B. As short as possible
C. Neither too small not too large
D. Very thick

Q.110 Electrical power of a battery is defined as the rate of:

A. Electrical energy consumed by the battery
B. Electrical energy transferred by the battery
C. Both
D. None of these

Q.111 1The hot resistance of the bulb's filament is higher than its cold resistance because the temperature coefficient of the filament is:

A. Zero
B. Negative
C. Positive
D. None

Q.112 The condition for the validity of Ohm's law is that the:

A. Temperature should remain constant
B. Current should be proportional to voltage
C. Resistance must be wire wound type
D. All of the above

Q.113 A resistance of 40 Ohms is attached to a circuit having current of 300 Amp, Find its voltage.

A. 12000 volts
B. 15000 volts
C. 20000 volts
D. 300 volts

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Q.114 Calculate the charge passing through the circuit if it's current it 10 Amp and the recorded time is 15 seconds:

A. 1500 Coulomb
B. 150 Coulomb
C. 13400 Coulomb
D. 140 Coulomb

Q.115 The SI Unit of electric charge is?

A. Coulomb
B. Ampere
C. Hertz
D. Volt

Q.116 To measure an A.C. voltage by using an A.C. potentiometer, it is desirable that the supply for the potentiometer is taken

A. From a source which is not the same as the unknown voltage
B. From a battery
C. From the same source as the unknown voltage
D. Any of the above

Q.117 EMF stands for

A. Electromotive force
B. Electrical momentum force
C. Electric Magnetic force
D. None of them

Q.118 An electrical instrument which is used to measure current passing through a circuit is called?

A. Ammeter
B. Voltmeter
C. Galvanometer
D. Avometer

Q.119 Copper wire is used as connecting wire because:

A. Copper has high electrical resistivity
B. Copper has low electrical resistivity
C. Copper has low electrical conductivity
D. Copper has high value of elasticity

Q.120 An example of non-ohmic resistor is

A. Diode
B. Tungsten wire
C. Carbon resistance
D. Copper wire

Q.121 A current of 16 amperes divides between two branches in parallel of resistances 8 ohms and 12 ohms respectively. The current in each branch is

A. 6.4 A, 6.9 A
B. 6.4 A, 9.6 A
C. 4.6 A, 6.9 A
D. 4.6 A, 9.6 A

Q.122 The temperature coefficient of resistance is expressed in:

A. °C
B. $°C^{-1}$
C. $m°C^{-1}$
D. None of these

Q.123 Four 100 W bulbs are connected in parallel across 200 V supply line. If one bulb gets fused

A. No bulb will light
B. All the four bulbs will light
C. Rest of three bulbs will light
D. Above B and C

Q.124 Find the resistance if voltage of the circuit is 45 volts and current 30 Amp?

A. 1.6 ohm
B. 1.5 ohm
C. 1.7 ohm
D. 1.8 ohm

Q.125 Steady current does not change with respect to_____.

A. Conductor
B. Source
C. Time
D. Potential difference

Q.126 A fuse is placed in series with the circuit to protect against

A. High power
B. High voltage
C. High current
D. Over heating

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Q.127 The terminal potential difference of a battery is greater than its emf when
A. The internal resistance of a battery is infinite
B. The internal resistance of a battery is zero
C. The battery is charged
D. The battery is discharged

Q.128 Find the resistance if voltage of the circuit is 45 volts and current 30 Amp?
A. 1.6-ohm
B. 1.5 ohm
C. 1.7-ohm
D. 1.8 ohm

Q.129 Which of the following statements is true?
A. Power is proportional to voltage only
B. Power is proportional to current only
C. Power is neither proportional to voltage nor to the current
D. Power is proportional to both the voltage and current

Q.130 Materials that have both metallic and non-metallic characteristics are called
A. Semiconductor
B. Metal
C. Non-metal
D. Organic compound

Q.131 All electrical appliances are connected in parallel to each other between the main line and neutral wire to get:
A. Same current
B. Same current and a potential difference
C. Different current but the same potential difference
D. Different current and potential differences

Q.132 Terminal potential difference of a cell
A. Increases with increase in its internal resistance
B. Decrease with increase in internal resistance
C. Is independent of its internal resistance
D. None of these

Q.133 The resistance of a superconductor is
A. Finite
B. Infinite
C. Zero
D. Changes with every conductor

Q.134 Calculate the charge passing through the circuit if it's current it 10 Amp and the recorded time is 15 seconds
A. 1500 Coulomb
B. 150 Coulomb
C. 13400 Coulomb
D. 140 Coulomb

Q.135 To measure an A.C. voltage by using an A.C. potentiometer, it is desirable that the supply for the potentiometer is taken
A. From a source which is not the same as the unknown voltage
B. From a battery
C. From the same source as the unknown voltage
D. Any of the above

Q.136 _____ relationship exists between current and voltage in terms of Ohm's law
A. Non-linear
B. Varying
C. Linear
D. None of them

Q.137 Resistivity of a conductor depends upon
A. Temperature
B. Length
C. Cross sectional area
D. None of these

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Q.138 The current passing through a resistor in a circuit is 1 A when the voltage across the same resistor is 10 V. What is the value of current when the voltage across the resistor is 8 V?

A. 0.8A
B. 8A
C. 80A
D. 18A

Q.139 Value of current in a short circuit is_____

A. Infinite
B. Zero
C. Minimum
D. Maximum

Q.140 How much potential difference is required for establishing steady current?

A. Minimum
B. Constant
C. Maximum
D. Varying

Q.141 Our system stability is least affected by

A. Reactance of generator
B. Input torque
C. Losses
D. Reactants of transmission line

Q.142 What is the SI Unit of Potential difference?

A. Volts
B. Coulomb
C. Meter
D. Newton's

Q.143 A 200-watt bulb operates in a 220V circuit. Find the current.

A. 0.9 Amp
B. 0.6 Amp
C. 2 Amp
D. 3 Amp

Q.144 SI unit of resistivity is

A. Ohm
B. Ohm meter
C. Ohm/meter
D. Meter/ohm

Q.145 Resistivity of a substance is defined as the resistance of a _____ of that substance.

A. Meter
B. Meter square
C. Meter cube
D. Centimeter

Q.146 International ohm is defined in terms of the resistance of

A. A column of mercury
B. A cube of carbon
C. A cube of copper
D. The unit length of wire

Q.147 If the length of a potentiometer wire is doubled, the accuracy in determining the null point_____

A. Is increased
B. Is decreased
C. Remains constant
D. May increase or decrease

Q.148 If a cell of emf 2V and internal resistance 0.5 ohm is connected across a resistance R, the current that flows is same as that when a cell of emf 1.5 V and internal resistance 0.3 ohm is connected across the same resistor. Then R=_____Ohm.

A. 0.3
B. 0.6
C. 0.5
D. 0.75

Q.149 The SI Unit for resistance is?

A. Ohm
B. Ampere
C. Watt
D. None of these

Q.150 A 250V bulb passes a current of 0.3A. Calculate the power in the lamp.

A. 50W
B. 75W
C. 100W
D. 90W

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Q.151 An immersion heater of 400 watts kept on for 5 hours will consume electrical power of
A. 2KWh
B. 20KWh
C. 6KWh
D. 12KWh

Q.152 Resistance of carbon filament lamp_____ as the applied voltage increases.
A. Increases
B. Decreases
C. Remains same
D. None of the above

Q.153 The four bulbs of 40 W each are connected in series with a battery across them. Which of the following statement is true?
A. The current through each bulb in same
B. The voltage across each bulb is not same
C. The power dissipation in each bulb is not same
D. None of the above

Q.154 A 200-watt bulb operates in a 220V circuit. Find the current.
A. 0.9 Amp
B. 0.6 Amp
C. 2 Amp
D. 3 Amp

Q.155 Ohm's law is valid at_____ temperatures
A. Constant
B. Varying
C. All of them
D. None of them

Q.156 Why should a resistance be introduced in a circuit in series deliberately?
A. To increase current
B. To decrease current
C. To control current
D. Just to give a good look to the circuit

Q.157 _____ is a source of electrical energy having fixed polarity and terminals?
A. Motor
B. Metals
C. Battery
D. Generator

Q.158 Volts / Ampere =
A. Ohm
B. Ohm meter
C. Pascal
D. None of them

Q.159 How much potential difference is required for establishing steady current?
A. Minimum
B. Constant
C. Maximum
D. Varying

Q.160 Choose the wrong statement from the following: For accurate measurements, a potentiometer wire_____
A. Must have a uniform cross section
B. Must have a high temperature coefficient of resistance
C. High specific resistance
D. Homogeneity

Q.161 Find the resistance if voltage of the circuit is 45 volts and current 30 Amp?
A. 1.6 ohm
B. 1.5 ohm
C. 1.7 ohm
D. 1.8 ohm

Q.162 SI Unit of current is?
A. Ampere
B. Volt
C. Joules
D. Watt

Q.163 A current of 16 amperes divides between two branches in parallel of resistances 8 ohms and 12 ohms respectively. The current in each branch is
A. 6.4 A, 6.9 A
B. 6.4 A, 9.6 A
C. 4.6 A, 6.9 A
D. 4.6 A, 9.6 A

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Q.164 A wire has a resistance of 5.5 Ω at 19°C and 21.5 Ω at 200°C. Find the temperature coefficient of resistivity(α) of the material.

A. 0.016 per degree Celsius
B. 32 per degree Celsius
C. 0.018 per degree Celsius
D. 0.00106 per degree Celsius

Q.165 If a cell of emf 2V and internal resistance 0.5 ohm is connected across a resistance R, the current that flows is same as that when a cell of emf 1.5 V and internal resistance 0.3 ohm is connected across the same resistor. Then R= _____ Ohm.

A. 0.3
B. 0.6
C. 0.5
D. 0.75

Q.166 In a lamp load when more than one lamp are switched on the total resistance of the load

A. Increases
B. Decreases
C. Remains same
D. None of the above

Q.167 In a conductor, if 6-coulomb charge flows for 2 seconds. The value of electric current will be

A. 3 ampere
B. 3 volts
C. 2 amperes
D. 2 volts

Q.168 Calculate the time taken for the charges to complete the circuit if the total charges were 5000 Coulomb and the current of the circuit was 20 Amp?

A. 250 seconds
B. 350 seconds
C. 400 seconds
D. 500 seconds

ANSWER KEY

1	D	21	B	41	B	61	C	81	A	101	A	121	B	141	C	161	B
2	A	22	C	42	B	62	D	82	A	102	D	122	B	142	A	162	A
3	B	23	A	43	A	63	A	83	B	103	A	123	C	143	A	163	B
4	C	24	A	44	A	64	A	84	A	104	A	124	B	144	B	164	A
5	D	25	A	45	C	65	B	85	B	105	C	125	C	145	C	165	A
6	A	26	A	46	B	66	B	86	B	106	C	126	D	146	A	166	B
7	A	27	A	47	B	67	A	87	B	107	C	127	C	147	A	167	A
8	B	28	B	48	A	68	C	88	D	108	D	128	B	148	A	168	A
9	D	29	A	49	D	69	A	89	A	109	A	129	D	149	A		
10	A	30	B	50	A	70	C	90	C	110	C	130	A	150	B		
11	A	31	B	51	B	71	B	91	A	111	C	131	C	151	A		
12	C	32	B	52	A	72	D	92	A	112	A	132	B	152	B		
13	D	33	D	53	A	73	D	93	B	113	A	133	C	153	A		
14	A	34	D	54	C	74	A	94	A	114	B	134	B	154	A		
15	C	35	B	55	C	75	A	95	A	115	A	135	C	155	A		
16	D	36	A	56	A	76	B	96	C	116	C	136	C	156	B		
17	B	37	A	57	A	77	C	97	B	117	A	137	A	157	C		
18	D	38	C	58	A	78	B	98	D	118	A	138	A	158	A		
19	A	39	D	59	D	79	A	99	C	119	B	139	A	159	B		
20	C	40	A	60	C	80	C	100	B	120	A	140	B	160	B		

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8 TOPIC ELECTROMAGNETISM

PRACTICE EXERCISE

Q.1 If the direction of the field and area vector is opposite then field is
A. positive
B. zero
C. negative
D. none of these

Q.2 An uncharged conductor has
A. free electrons
B. protons
C. holes
D. all of these

Q.3 A steady current passing through a conductor produces
A. Electric field
B. Magnetic field
C. Both of these
D. None of these

Q.4 If the direction of current is upward pointed by thumb, magnetic field is north side, than force will be
A. left
B. right
C. top
D. bottom

Q.5 Magnetic field lines form _____ loops from pole to pole.
A. open
B. closed
C. branched
D. opened or closed

Q.6 Non-inductive resistances are used in
A. ammeter
B. voltmeter
C. resistance boxes
D. all of these

Q.7 A solenoid 15.0 cm long has 300 turns of wire, a current 5 A flows through it. The magnitude of magnetic field inside the solenoid is
A. 1.37×10^{-7} w/m^2
B. 1.37×10^{-5} w/m^2
C. 1.37×10^{-4} w/m^2
D. 1.37×10^{-2} w/m^2

Q.8 Magnetic Force between two wires is inversely proportional to
A. distance
B. current on them
C. Charge on them
D. none of these

Q.9 Can we see magnetic field lines?
A. Yes
B. No
C. Depends on strength of field
D. Only when the field is large

Q.10 F= e(vxB) is valid for
A. electron
B. proton
C. neutron
D. all

Q.11 What happens to the flux if applied magnetic field is doubled on the same surface
A. becomes half
B. becomes twice
C. becomes infinite
D. becomes 4 times

Q.12 Two α-particles have the ratio of their velocities as 3 : 2 on entering the field. If they move in different circular paths, then the ratio of the radii of their paths is
A. 2 : 3
B. 3 : 2
C. 4 : 9
D. 9 : 4

Q.13 Magnetic field is very strong where magnetic field lines are
A. zero
B. far apart
C. very close
D. none of these

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Q.14 Lorentz force can be represented as
A. q[E + (v × B)]
B. q[E + vB cos0)
C. both
D. none of these

Q.15 A circular loop of radius 2 m placed having area is perpendicular to the direction of magnetic field of 100 T, flux will be:
A. 1256 wb
B. 12.96 wb
C. 1190 wb
D. 1426 wb

Q.16 What is the angular frequency during the circular motion?
A. qm/B
B. m/qB
C. qB/m
D. qmB

Q.17 Magnetic flux is zero
A. when angle is 90
B. angle is 0
C. angle is 180
D. none of these

Q.18 The magnetic force is simply a
A. reflecting force
B. deflecting force
C. restoring force
D. gravitational force

Q.19 A square loop of side 2 m is place in a 5 T of magnetic field. What will be the related flux?
A. 2.5 Weber
B. 5 weber
C. 10 weber
D. 20 weber

Q.20 In Lorentz force, magnetic force is
A. work force
B. deflecting force
C. resistive force
D. none of these

Q.21 Magnetic force between two wires which are having current in opposite direction will
A. attract each other
B. repel each other
C. experience no force between them
D. none of these

Q.22 If the direction of the field and area vector is opposite then field is
A. positive
B. zero
C. negative
D. none of these

Q.23 An uncharged conductor has
A. electrons
B. protons
C. holes
D. all of these

Q.24 Magnetic force between two wires is proportional to
A. distance
B. current on them
C. Charge on them
D. none of these

Q.25 When a charge particle enters in the magnetic field perpendicular to the velocity of charge followed path is:
A. circular
B. parabolic
C. elliptical
D. hyperbolic

Q.26 The unit of magnetic induction is
A. tesla
B. $NA^{-1}m^{-1}$
C. Gauss
D. All of these

Q.27 Work done by the magnetic force on charged particle in presence of perpendicular magnetic field is
A. positive
B. zero
C. negative
D. none of these

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Q.28 If a force of 2 N is applied on charge of 3 Coulomb, the electric field becomes
A. 3/2 N/C
B. 2/3 N/C
C. 1/2 N/C
D. none of these

Q.29 e/m =
A. mv/Br
B. v/Br
C. r/Bv
D. B/vr

Q.30 Find the magnetic flux through a 1000 turn solenoid of radius 10 cm and length equal to 30 cm and a current 3 A pass through it
A. 0.4×10^{-3} Wb
B. 4000 Wb
C. 0.4 Wb
D. 4 Wb

Q.31 A solenoid bent into a circle is called
A. Resistor
B. capacitor
C. inductor
D. toroid

Q.32 If a charge particle enters in a region where electric and magnetic field are parallel to its motion, then it will
A. deflect upwards
B. deflect downward
C. speed up
D. speed down

Q.33 Strength of magnetic field is called
A. strength
B. flux
C. magnetic flux density
D. density

Q.34 A circular loop of area 0.05 m² rotates in a uniform magnetic field of 0.2 T. If the loop rotates about its diameter which is perpendicular to the magnetic field, find flux linked with loop when its plane is inclined 60 degree to the field
A. 0.01 wb
B. 0 Wb
C. 8.66×10^{-3} Wb
D. 0.86 wb

Q.35 What is the radius of circular path, if particle has mass m and charge q
A. r = qb/m
B. r = mv/B
C. r= mv/qB
D. r = mvr/qB

Q.36 Magnetic field will not produce in case of
A. charged positive particles
B. charged negative particles
C. neutral particles
D. All of these

Q.37 Magnetic flux is a
A. scalar quantity
B. vector quantity
C. sometimes scalar sometimes vector
D. none of these

Q.38 Whenever the magnetic flux linked with an electric circuit changes, an emf is induced in the circuit. This is called
A. electromagnetic induction
B. kirchoff's law
C. hysteresis loss
D. Lenz's law

Q.39 Unit of magnetic flux density is
A. Tesla
B. Wb/m²
C. N/Am
D. All

Q.40 Force experienced by charge particles in magnetic field is
A. perpendicular to velocity
B. perpendicular to field
C. parallel to field
D. perpendicular to velocity and field

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Q.41 1 tesla is equal to
A. 100 N/Am
B. 1 N/Am
C. 0.1 Nm/A
D. 1 Nm/A

Q.42 Unit of relative permeability is:
A. henry
B. henry/m
C. dimensionless
D. henry/sq. m

Q.43 A charged particle enters in a strong magnetic field, its K.E:
A. decreases
B. increases then decreases
C. becomes zero
D. remains constant

Q.44 Do magnetic field lines intersect?
A. Yes
B. No
C. depends on strength of field
D. cannot be determined

Q.45 A circular loop of area 0.05 m^2 rotates in a uniform magnetic field of 0.2 T. If the loop rotates about its diameter which is perpendicular to the magnetic field, find flux linked with loop when its plane is normal to the field:
A. 0.01 wb
B. 0 Wb
C. 8.66×10^{-3} Wb
D. 0.86 wb

Q.46 Magnetic flux is given by
A. dot product of magnetic field and area vector
B. cross product of magnetic field and area vector
C. both of these
D. none of these

Q.47 The magnetic field lines generated in current carrying conductor are
A. circular
B. triangular
C. linear
D. none of these

Q.48 If a current wire of 2 A and length 5m enters perpendicular to magnetic field of 10T. calculate the force experienced by it
A. 50N
B. 100N
C. 200N
D. 25N

Q.49 Magnetic field along the axis of solenoid with n turns per unit length carrying current I is given by:
A. $B=\mu_o nI$
B. $B = \mu_o N / L$
C. $B = \mu_o IN$
D. $B = \mu_o INL$

Q.50 Is it possible to separate north pole only from bar magnet:
A. yes
B. no
C. in some cases it is possible
D. none of these

Q.51 Magnetic field outside the solenoid is:
A. strong
B. infinite
C. negligible
D. none of these

Q.52 Electric charge in uniform motion produces
A. electric field
B. magnetic field
C. both of these
D. none of these

Q.53 Magnetic flux is the dot product of magnetic induction and:
A. area
B. vector area
C. unit area
D. none of these

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Q.54 A beam of ion with velocity $2x10^5$ m/s enters normally into a magnetic field of 0.04 T. The specific charge of ion is $5x10^7$ C/kg. Radius of circle is:

A. 0.1 m
B. 0.16 m
C. 0.2 m
D. 0.25 m

Q.55 Electric charge in accelerating motion will produce:

A. electric field
B. magnetic field
C. EM waves
D. none of these

Q.56 SI unit of magnetic induction is:

A. Weber
B. Gauss
C. Tesla
D. Maxwell

Q.57 When north pole of bar magnet move towards a conducting loop, induced current flows in

A. clockwise sense
B. anticlockwise sense
C. not generates
D. not enough information

Q.58 The magnetic field is parallel to a surface, then the magnetic flux through the surface is

A. Zero
B. small but not zero
C. infinite
D. large but not infinite

Q.59 If magnetic field is given by B= (2i + 3j -8k) and a loop of area 10 m^2 is placed in field in y-z plane , max flux will be

A. -20 wb
B. 30 wb
C. 20 wb
D. 80 wb

Q.60 A strong magnetic field is applied on a stationary electron. Then the electron

A. moves in the direction of the field.
B. moves perpendicular to the direction of the field.
C. moves opposite to the direction of the field.
D. remains stationary.

Q.61 Find the electric field when the velocity of the field is 12m/s and the flux density is 8.75 units.

A. 510
B. 105
C. 150
D. 165

Q.62 During the circular path in magnetic field, what is the magnetic force

A. F= qB
B. F = qB2
C. F = qB/v
D. F = qvB

Q.63 For which angle between area and magnetic field, flux is maximum

A. 0 degree
B. 90 degree
C. 45 degree
D. 60 degree

Q.64 A monoenergetic electron beam with an electron speed of 5.20×10^6 m/s is subject to a magnetic field of 1.30×10^{-4} T normal to the beam velocity. What is the radius of the circle traced by the beam, given e/m for electron equals 1.76×10^{11} C/kg

A. 22.7 cm
B. 21.3 cm
C. 20 cm
D. 21.9 cm

Q.65 A circular loop of area 200 cm^2 sites in x-z plane, then a uniform magnetic field B = (0.3i + 0.4j) is applied on it, find the magnetic flux through the loop:

A. 0.8 wb
B. 8 wb
C. 0.008 wb
D. 0.08 wb

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Q.66 Magnetic Field lines move from_____
A. north to south
B. south to north
C. east to west
D. west to east

Q.67 What is the magnitude of the magnetic field B= (0.3i + 0.4j) T?
A. 5 T
B. 2.5 T
C. 0.5 T
D. 2 T

Q.68 Magnetic field lines created by current carrying wire is
A. Helical
B. Elliptical
C. Hyperbolic
D. Circular

Q.69 If a proton, alpha particle and photon moving with same velocity enter in uniform magnetic field then which particle will deflect more
A. proton
B. alpha particle
C. photon
D. all of these

Q.70 Magnetic field lines have a property that lines are_____
A. non intersecting
B. intersect near south pole
C. intersect near north pole
D. intersect every where

Q.71 Cos θ = Φ/
A. BA
B. A
C. B
D. B^2

Q.72 Which, among the following qualities, is not affected by the magnetic field?
A. Moving charge
B. charge in magnetic flux
C. current flowing in conductor
D. stationary charge

Q.73 A square coil of side length 2 mm is placed in the x-y plane and in uniform magnetic field 0.1 T. Find total flux through the coil.
A. 1.6 Wb
B. 0.16 Wb
C. 16 Wb
D. 0 Wb

Q.74 Force on a moving charge in a uniform magnetic field will be maximum, when angle between v & B is:
A. 0
B. 30
C. 60
D. 90

Q.75 If magnetic field vector is B = (i + 2j +k) and area vector is (2i + j + k) then flux related to this is
A. 4wb
B. 5 wb
C. 6 wb
D. 7 wb

Q.76 Find the magnetic force when a charge 3.5C with flux density of 4 T is having a velocity of 2m/s
A. 14
B. 28
C. 7
D. 32

Q.77 Current and magnetic field are always
A. perpendicular
B. parallel
C. circular
D. none of these

Q.78 1 wb = _____
A. 1 $Nm^{-1}A^{-1}$
B. 1 $Nm^{-1}A$
C. 1 NmA^{-1}
D. 1 NmA

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Q.79 Find the force due to a current element of length 2 cm and flux density of 12 tesla. The current through the element will be 5A.

A. 1N
B. 1.2N
C. 1.4N
D. 1.6N

Q.80 Find the magnetic flux density when a flux of 28 Wb is enclosed in an area of 15cm.

A. 178.33 units
B. 186.67 units
C. 192.77 units
D. 200 units

Q.81 A square loop of side 4 m is placed in magnetic field of 10 T, surface of the loop is making angle with the field 60 degree. What will be the flux?

A. 160 weber
B. 80 weber
C. 40 weber
D. 80 weber

Q.82 1 weber is equal to

A. 10 Gauss
B. 10^8 Maxwell
C. 10^{-4} Gauss
D. 10^4 Maxwell

Q.83 Current carrying loop behaves like a

A. monopole
B. dipole
C. quadrupled
D. octopole

Q.84 A charged particle is moving on circular path with velocity v in a uniform magnetic field B, if the velocity of the charged particle is doubled and strength of magnetic field is halved, then radius becomes

A. 8 times
B. 2 times
C. 4 times
D. 16 times

Q.85 The flux is the region where magnetic field

A. changes direction
B. changes strength
C. changes polarity
D. no change occur

Q.86 If a Charge of 2C is travelling parallel to a magnetic field of 4T with 20 m/s Calculate the net force on it.

A. 160N
B. 120N
C. 0N
D. 100N

Q.87 Is it possible to visualize magnetic field lines

A. yes directly we can see with eyes
B. we need microscope
C. we need telescope
D. All cases are not possible

Q.88 Magnetic flux density is a

A. scalar quantity
B. vector quantity
C. sometimes scalar sometimes vector
D. none of these

Q.89 If a charged particle moves through a magnetic field perpendicular to it

A. both momentum and energy of particle change
B. momentum as well as energy are constant
C. energy is constant but momentum changes
D. momentum is constant but energy changes

ow can a magnetic field be produced?

. Using a permanent magnet
B. Electric current
C. Using a temporary magnet
D. Using a permanent magnet or electric current

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Q.91 The magnetic flux linked with a coil is inversely proportional to the
A. Area of cross section
B. Number of turns
C. magnetic field
D. none of these

Q.92 Magnetic induction is also called
A. flux
B. magnetization
C. magnetic intensity
D. flux intensity

Q.93 Lorentz force in electric and magnetic field is
A. F= qv[E+B]
B. qE[v+B]
C. qvB
D. q[E+(v×B)]

Q.94 Find the Lorentz force of a charge 2.5C having an electric field of 5 N/C and magnetic field of 7.25 T with a velocity 1.5m/s.
A. 39.68
B. 68.93
C. 89.39
D. 63.98

Q.95 A loop of radius 1 m is placed on a inclined of 60 degree with the magnetic field of 100T, corresponding flux will be:
A. 314 wb
B. 107 wb
C. 157 wb
D. 435 wb

Q.96 What is the strength of magnetic field known as
A. flux
B. density
C. magnetic strength
D. magnetic flux density

Q.97 A 3 cm wire carrying a current of 10A is placed inside a solenoid of magnetic field 0.35 T. The Net force felt by wire is
A. 11.5N
B. 10.5N
C. 9.5N
D. 8.5N

Q.98 Electron and proton both with same momentum enter perpendicularly in uniform field
A. path of proton will be more curved
B. path of electron will be more curved
C. both have same curved path
D. path of both will straight line

Q.99 Electron charge in accelerating motion will produce
A. electric field
B. magnetic field
C. EM waves
D. none of these

Q.100 Charged body attracts uncharged body by ___ induction
A. electrostatic
B. magnetic
C. both a and b
D. none of these

Q.101 How can a magnetic field be produced?
A. Using a permanent magnet
B. Electric current
C. Using a temporary magnet
D. all of these

Q.102 Whenever the magnetic flux linked with an electric circuit changes, an emf is induced in the circuit. This is called
A. electromagnetic induction
B. kirchoff's law
C. hysteresis loss
D. Lenz's law

Q.103 A rectangular loop of dimension 3 cm by 5 cm is placed perpendicular in uniform magnetic field of 0.1 T, find the magnetic flux through the loop
A. 1.5 wb
B. 0.15 wb
C. 0.015 wb
D. 15 wb

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Q.104 The magnetic field is parallel to a surface, then the magnetic flux through the surface is:

A. zero
B. small but not zero
C. infinite
D. larger than 1

Q.105 One proton beam enters in magnetic field of 10^{-4} T normally with specific charge 10^{11} C/kg and velocity of 10^{7} m/s. What will be the radius of circle?

A. 0.1 m
B. 1 m
C. 10 m
D. none of these

Q.106 Sensitivity of a galvanometer is defined as

A. The deflection produced per unit micro ampere current
B. The deflection per force
C. Force per unit area
D. None of them

Q.107 If velocity of charged particle and magnetic field are at a fix angle not 90 then path will be:

A. circular
B. straight line
C. spherical
D. helical

108 In a rectifier, larger the value of shunt capacitor filter

A. larger the peak-to-peak value of ripple voltage
B. larger the peak current in the rectifying diode
C. longer the time that current pulse flows through the diode
D. smaller the dc voltage across the load

ANSWER KEY

1	C	21	B	41	B	61	B	81	B	101	D
2	A	22	C	42	C	62	D	82	B	102	A
3	B	23	A	43	D	63	A	83	B	103	B
4	A	24	B	44	B	64	A	84	C	104	B
5	B	25	A	45	A	65	D	85	D	105	B
6	D	26	D	46	A	66	A	86	C	106	A
7	A	27	B	47	A	67	C	87	D	107	D
8	A	28	B	48	B	68	D	88	B	108	C
9	B	29	B	49	A	69	A	89	C		
10	B	30	C	50	B	70	A	90	D		
11	B	31	D	51	C	71	A	91	D		
12	B	32	C	52	C	72	D	92	C		
13	C	33	C	53	B	73	D	93	D		
14	A	34	C	54	A	74	D	94	A		
15	A	35	C	55	C	75	B	95	C		
16	C	36	C	56	C	76	B	96	D		
17	A	37	A	57	B	77	A	97	B		
18	B	38	A	58	B	78	C	98	C		
19	D	39	D	59	C	79	B	99	C		
20	B	40	D	60	D	80	B	100	A		

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9 TOPIC ELECTROMAGNETIC INDUCTION

PRACTICE EXERCISE

Q.1 Transformer is used to
A. Transform voltage
B. Transform current
C. Generator
D. Self inductor

Q.2 The coil is rotate in magnetic field
A. The current will be low.
B. Current will be increased
C. Current will be continuously change
D. All of these

Q.3 Self-Induction depends on
A. Current
B. Voltage
C. Number of turns
D. All

Q.4 In modulation which quantity doesn't change in Frequency modulation
A. Amplitude
B. frequency
C. time period
D. all

Q.5 Which of following act as motor
A. Ammeter
B. Voltmeter
C. Galvanometer
D. All

Q.6 When transformer is heated the which of the following decrease
A. current
B. voltage
C. magnetic induction
D. all

Q.7 An open-circuit test transformer is used to measure the loss.
A. current
B. voltage
C. core
D. All

Q.8 Which is the correct relation:
A. Ns/Np = Vs/Vp
B. NsNp =Vs/Vp
C. Ns/Np = Is/Ip
D. None

Q.9 In a step-up transformer, current across secondary is _____
A. more
B. less
C. equal
D. None

Q.10 Basic source of magnetism is:
A. Magnetic domains
B. magnetic dipoles
C. charge moving in magnetic field
D. None

Q.11 Find Turn ratio if Vs/Vp=2
A. 2 : 1
B. 1 : 2
C. 4 : 8
D. None

Q.12 Ac generator changes Current
A. Back and Forward
B. Only in Back
C. Only in Forward
D. None

Q.13 Lenz's law is used to find direction of
A. Induced current
B. Induced emf
C. Both
D. None

Q.14 A.C generator is similar to
A. Transformer
B. Capacitor
C. Inductor
D. None

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Q.15 In step down transformer the current in primary coil is ..... than secondary coil

A. More
B. Less
C. Equal
D. None

Q.16 Which law is based upon law of conservation of energy?

A. Lenz Law
B. Faraday Law
C. Ohms Law
D. Coulombs Law

Q.17 A charged particle is moving in a cyclotron, what effect on the radius of path of this charged particle will occur when the frequency of the ratio frequency field is doubled?

A. It will also be doubled.
B. It will be halved.
C. It will be increased by four times.
D. It will remain unchanged.

Q.18 A moving conductor coil produces an induced e.m.f. This is in accordance with

A. Lenz's law
B. Faraday's law
C. Coulomb's law
D. Ampere's law

Q.19 Faraday's laws are consequence of the conservation of

A. charge
B. energy
C. magnetic field
D. both B. and C.

Q.20 What is emf?

A. Force
B. Voltage
C. Current
D. Flux

Q.21 Voltage induced in secondary coil of transformer is given by

A. $N_P \times V_P/N_S$
B. $N_S \times V_P/N_P$
C. $(N_P/V_P) \times N_S$
D. $N_P/(V_P \times N_S)$

Q.22 Power loss in the actual transformer is due to

A. Small output
B. Eddy currents and magnetic hysterias
C. Soft iron core
D. Back emf

Q.23 The output voltage of a transformer is 3 times the input voltage then turns ratio will be

A. 5
B. 3
C. 1
D. 6

Q.24 When a wire loop is rotated in a magnetic field, the direction of induced emf changes in energy

A. 1 revolution
B. 1/2 revolution
C. 1/4 revolution
D. 2 revolution

Q.25 What is the function of a transformer?

A. Transformer is used to step down or up the AC voltages and currents
B. Transformer is used to step down or up the DC voltages and currents
C. Transformer converts DC to AC voltages
D. Transformer converts AC to DC voltages

Q.26 Transformer ratings are given in

A. kVA
B. HP
C. kVAR
D. kW

Q.27 The frictional loss in a transformer is

A. 10 %
B. 50 %
C. 0 %
D. More than 50 %

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Q.28 Which of the following is most suitable for the core of electromagnets?
A. Soft iron
B. Steel
C. Copper-nickel alloy
D. Air

Q.29 Find out the correct relation from the following.
A. 1 Wb = 1 G cm
B. 1 Wb = 1 Tm
C. 1 Wb = 1 G cm^2
D. 1 Wb = 10^8 Maxwell

Q.30 Identify the law used to find the direction of eddy currents.
A. Lenz's law
B. Maxwell's law
C. Ampere's law
D. Faraday's law

Q.31 In a transformer, the number of turns in the primary and the secondary are 410 and 1230 respectively. If the current in primary is 6A, then that in the secondary coil is
A. 2 A
B. 18 A
C. 12 A
D. 1 A

Q.32 A step-down transformer reduces the supply voltage from 220 V to 11 V and increase the current from 6 A to 100 A. Then its efficiency is
A. 1.2
B. 0.83
C. 0.12
D. 0.9

Q.33 It is made of many loops mounted on a shaft or axle
A. fuse
B. transformer
C. armature
D. circuit

Q.34 An ideal transformer dissipates
A. unit power
B. infinite power
C. zero power
D. limited power

Q.35 The number of coils in a transformer is
A. 2
B. 3
C. 4
D. 5

Q.36 An electromagnet is
A. permanent
B. temporary
C. insulator
D. conductor

Q.37 The power is transmitted over long distances and high voltages to
A. minimize the energy loss
B. maximize the energy loss
C. make energy content constant
D. preserve energy

Q.38 To increase or decrease AC voltages, we use
A. fuse
B. circuit breaker
C. transformer
D. generator

Q.39 In an A.C generator, increase in number of turns in the coil
A. Increases emf
B. Decreases emf
C. Makes the emf zero
D. Maintains the emf at a constant value

Q.40 Which of the following is the unit of mutual inductance?
A. VsA^{-2}
B. $V^3 sA^2$
C. V^2 s
D. VsA^{-1}

Q.41 Voltage in secondary winding is _____ to current in secondary coil
A. directly proportional
B. inversely proportional
C. directly squared proportional
D. not enough information

Q.42 For a 1 efficient step down transformer
A. voltage in primary and secondary are equal
B. current in primary and secondary are equal
C. input power is same as the output power
D. output power is zero

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MC Topic-9

.43 Which one of the following is not present in AC generator
A. Armature
B. Magnet
C. slip rings
D. Commutator

Q.44 Lamination of the transformer core is made of
A. cast iron
B. silicon steel
C. Aluminium
D. cast steel

Q.45 The voltage turn ratio of step-down transformer is
A. 1:2
B. 1:3
C. 2:1
D. 2:5

Q.46 A transformer steps down from 200V to 50 V. It has secondary winding = 40 turns, then windings in primary coil are
A. 150
B. 160
C. 170
D. 200

Q.47 Time varying magnetic field creates electric field, this is called
A. electric induction
B. magnetic induction
C. electromagnetic induction
D. dipole induction

Q.48 A 100-turn coil of area 0.1 m^2 rotates at half a revolution per second. It is placed in a uniform magnetic field of 0.01 T perpendicular to the axis of rotation of the coil. Calculate the maximum voltage generated in the coil?
A. 256.33 V
B. 89.12V
C. 0.314V
D. 3.1455 V

Q.49 Calculate the mutual inductance between two coils if a current 10 A in the primary coil changes the flux by 500 Wb per turn in the secondary coil of 200 turns.
A. 10H
B. 10000H
C. 100H
D. 1000H

Q.50 The turns ratio of transformer is 10, It means that;
A. Is=10Ip
B. Ns=Np/10
C. Ns=10Np
D. Vs=Vp/10

Q.51 If magnetic field is doubled then magnetic energy density becomes
A. four times
B. two times
C. three times
D. six times

Q.52 The mutual induction happens in
A. AC generator
B. DC generator
C. Battery
D. Transformer

Q.53 Alternating Current Generators use:
A. coiled rings
B. split rings
C. slip rings
D. solenoid rings

Q.54 Faraday law states that the rate of change of magnetic flux is equal to
A. electromotive force
B. induced current
C. induced flux
D. induced magnetic field

Q.55 Face of coil having clockwise current:
A. behaves like north pole
B. behaves like south pole
C. becomes magnet of varying poles
D. does not behave like magnet

Q.56 The root mean square value of the alternating current is equal to
A. twice the peak value
B. half the peak value
C. equal to the peak value
D. $(1/\sqrt{2})$ times the peak value

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Q.57 For a coil self-inductance L and current I then flux passing through it is
A. LI
B. LI^2
C. $L^2 I$
D. $(LI)^2$

Q.58 Lenz law is in accordance with conservation of
A. momentum
B. charge
C. current
D. energy

Q.59 Energy stored in an inductor is
A. electric energy
B. magnetic energy
C. electromagnetic energy
D. both a) and b)

Q.60 A sinusoidal current has rms value of 10A What is the peak value of current?
A. 144.4A
B. 1.4A
C. 0.1414A
D. 14.4A

Q.61 A device that consumes electrical energy in the external circuit of generator is known as
A. appliances
B. machines
C. motors
D. load

Q.62 The maximum instantaneous value measured from zero value is known as?
A. peak value
B. peak to peak value
C. cycle
D. period

Q.63 A real transformer does not change
A. voltage level
B. current level
C. power level
D. frequency level

Q.64 The coupling coefficient of perfectly coupled coil is
A. zero
B. 1
C. more than 1
D. infinite

Q.65 If the peak-to-peak voltage is 10V, calculate the peak voltage.
A. 2V
B. 10V
C. 4V
D. 5V

Q.66 According to Faraday law induced voltage is produced by change in
A. electric field
B. magnetic field
C. both a or b
D. position

Q.67 Principle of electric generator is based on
A. biot savart's law
B. biot savart's law
C. newton's law
D. faraday law

Q.68 In step down transformer _____ is decreased in secondary coils
A. electric field
B. magnetic field
C. number of turns
D. none of these

Q.69 In an A.C. generator, increase in number of turns in the coil
A. Increases emf
B. Decreases emf
C. Makes the emf zero
D. Maintains the emf at a constant value

Q.70 Which of the following is the unit of mutual inductance?
A. $Vs\,A^{-2}$
B. $V^3 s\,A^2$
C. $V^2 s$
D. $Vs\,A^{-1}$

Q.71 Voltage in secondary winding is _____ to current in secondary coil
A. Directly proportional
B. Inversely proportional
C. Directly squared proportional
D. Not enough information

Q.72 For a 1 efficient step-down transformer
A. Voltage in primary and secondary are equal
B. Current in primary and secondary are equal
C. Input power is same as the output power
D. Output power is zero

Q.73 Which one of the following is not present in AC generator?
A. Armature
B. Magnet
C. Slip rings
D. Commutator

Q.74 Motional emf can be produced with
A. Changing magnetic field in space
B. Changing magnetic field in time
C. Changing flux with space
D. Constant magnetic field

Q.75 For ideal step-up transformer Ps___Pp.
A. Equal to
B. Greater than
C. Less than
D. None of these

Q.76 Lamination of the transformer core is made of
A. Cast iron
B. Silicon steel
C. Aluminium
D. Cast steel

Q.77 Magnetic flux is _____ product
A. Scalar
B. Vector
C. Simple
D. None of these

Q.78 A transformer steps down from 200V to 50 V. It has secondary winding = 40 turns, then windings in primary coil are
A. 150
B. 160
C. 170
D. 200

Q.79 According to Faraday law EMF stands for
A. Electromagnetic friction
B. Electromagnetic force
C. Electromagnetic function
D. None of these

Q.80 Time varying magnetic field creates electric field, this is called
A. Electric induction
B. Magnetic induction
C. Electromagnetic induction
D. Dipole induction

Q.81 The secondary turns of which of the following transformers is always kept closed for_____ Transformer
A. Power
B. Voltage
C. current
D. Step down

Q.82 A 100-turn coil of area 0.1 m^2 rotates at half a revolution per second. It is placed in a uniform magnetic field of 0.01 T perpendicular to the axis of rotation of the coil. Calculate the maximum voltage generated in the coil?
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C. 100H
D. 1000H

Q.84 The turns ratio of transformer is 10, It means that;
A. Is=10Ip
B. Ns=Np/10
C. Ns=10Np
D. Vs=Vp/10

Q.85 If magnetic field is doubled then magnetic energy density becomes
A. Four times
B. Two times
C. Three times
D. Six times

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Q.86 The mutual induction happens in
A. AC generator
B. DC generator
C. Battery
D. Transformer

Q.87 Faraday law states that the rate of change of magnetic flux is equal to
A. Electromotive force
B. Induced current
C. Induced flux
D. Induced magnetic field

Q.88 Faraday's law explains how electric field will interact with:
A. Electric field
B. Magnetic field
C. Battery
D. None of these

Q.89 Face of coil having clockwise current:
A. Behaves like north pole
B. Behaves like south pole
C. Becomes magnet of varying poles
D. Does not behaves like magnet

Q.90 For a coil self-inductance L and current I then flux passing through it is
A. LI
B. LI^2
C. L^2I
D. $(LI)^2$

Q.91 Lenz law is in accordance with conservation of
A. Momentum
B. Charge
C. Current
D. Energy

Q.92 Identify the factor on which mutual inductance does not depend.
A. Relative orientation
B. Relative separation of two coils
C. Reciprocity
D. Permeability of the core material

Q.93 Energy stored in an inductor is
A. Electric energy
B. Magnetic energy
C. Electromagnetic energy
D. Both 'A' and 'B'

Q.94 A sinusoidal current has rms value of 10A. What is the peak value of current?
A. 144.4A
B. 1.4A
C. 0.1414A
D. 14.4A

Q.95 A device that consumes electrical energy in the external circuit of generator is known as
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B. Machines
C. Motors
D. Load

Q.96 The maximum instantaneous value measured from zero value is known as?
A. Peak value
B. Peak to peak value
C. Cycle
D. Period

Q.97 A real transformer does not change
A. Voltage level
B. Current level
C. Power level
D. Frequency level

Q.98 The coupling coefficient of perfectly coupled coil is
A. Zero
B. 1
C. More than 1
D. Infinite

Q.99 If the peak-to-peak voltage is 10V, calculate the peak voltage.
A. 2V
B. 10V
C. 4V
D. 5V

Q.100 Calculate the frequency if the number of revolutions is 300 and the paired poles are 50.
A. 15 kHz
B. 150 kHz
C. 1500 kHz
D. 150 Hz

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PMC Topic-9

Q.101 Which of the following is not a type of rectifier?
A. Phase wave rectifier
B. Full wave
C. Half wave
D. None of them

Q.102 Principle of electric generator is based on
A. Biot savart's law
B. Ampere's law
C. Newton's law
D. Faraday law

Q.103 In step down transformer _____ is decreased in secondary coils
A. Electric field
B. Magnetic field
C. Number of turns
D. None of these

Q.104 X' is a rectangular coil consisting of a large number of turns of copper wire wound over a soft iron core in an a.c. generator. Identify X:
A. Slip rings
B. Armature
C. Copper brushes
D. Field magnet

Q.105 If the peak voltage is 9V, calculate the peak-to-peak voltage.
A. 9V
B. 18V
C. 4.5V
D. 0V

Q.106 Lenz's law provides information about direction of:
A. Inductance
B. Induced current
C. Induced flux
D. Induced magnetic field

Q.107 The open-circuit test in a transformer is used to measure:
A. Copper loss
B. Winding loss
C. Total loss
D. Core loss

Q.108 A 220 V main supply is connected to a resistance of 100 k ohms. The effective current is:
A. 2.2 mA
B. $2.2/\sqrt{2}$ mA
C. $2.2 \times \sqrt{2}$ mA
D. None of the above

Q.109 The principle of a direct current generator is based on
A. Coulomb's Law
B. Ampere's Law
C. Faraday's Law
D. Lenz's Law

Q.110 In step up transformer _____ is increased in secondary coils
A. Electric field
B. Magnetic field
C. Number of turns
D. None of these

Q.111 Electric motor converts _____ to _____ energy.
A. Electric, mechanical
B. Mechanical, electric
C. Mechanical, potential
D. Not enough information

Q.112 One of the major reasons for heat loss in transformer is:
A. Radiation loss
B. Convection loss
C. Eddy current loss
D. None of these

Q.113 Weber is the unit of:
A. Magnetic flux
B. Electric flux
C. Both A or B
D. None of these

Q.114 SI Unit of current is?
A. Ampere
B. Volt
C. Joules
D. Watt

Q.115 For currents changing with time will produce_____ field.
A. Electrostatic
B. Magnetostatic
C. Electromagnetic
D. None of these

Q.116 For a metal rod of length L and moving with speed v in perpendicular to magnetic field then motional emf at its end is:

A. lvB
B. lvB^2
C. lv^2B
D. None of these

Q.117 Current that fluctuates periodically with time is:

A. DC current
B. BC current
C. AC current
D. Magnetic current

Q.118 If the instantaneous current in a circuit is given by I = A sin (wt) ampere, the rms value of the current is:

A. 2A
B. $A/\sqrt{2}$
C. $2\sqrt{2}A$
D. Zero

Q.119 Power transformers are designed to have maximum efficiency at:

A. Full load
B. 50%
C. 80%
D. No load

Q.120 For step down transformer Ns_____Np.

A. Equal to (=)
B. Less than (<)
C. Greater than (>)
D. Not equal

Q.121 The transformer laminations are insulated from each other by:

A. Mica strip
B. Paper
C. Thin coating of Varnish
D. Any of the above

Q.122 What is the duration of one cycle known as?

A. Period
B. Cycle
C. Instantaneous value
D. Sin wave

Q.123 Transformer is based on the theory of:

A. Self-inductance only
B. Mutual inductance
C. Capacitive effect
D. All of these

Q.124 emf = $-N(\Delta\Phi/\Delta t)$ is according to:

A. Ampere's Law
B. Faraday's Law
C. Lenz's Law
D. None of these

Q.125 SI unit of inductance is

A. Henry
B. Farad
C. Maxwell
D. Weber

Q.126 Henry is unit of

A. Self-inductance only
B. Mutual inductance
C. Both 'a' and 'b'
D. Emf

Q.127 The direction of induced current is always so as to oppose the change which causes the current is

A. Faraday's Law
B. Lenz's Law
C. Ohm's Law
D. Kirchoff's Law

Q.128 Principle of transformer is

A. Mutual inductance
B. Self-induction
C. Motional emf
D. None of these

Q.129 According to Faraday's Law, emf induced in circuit depends on

A. Max. magnetic flux
B. Rate of change of magnetic flux
C. Change in magnetic flux
D. Initial flux

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Q.130 In step up transformer
A. Vs/Vp =1
B. Vs<Vp
C. Vs=Vp
D. Vs>Vp

Q.131 If we make the magnetic field stronger, the value of induced current is
A. Decreased
B. Increased
C. Vanished
D. Kept constant

Q.132 Which one of the following is not found in a DC generator?
A. Armature
B. Slip rings
C. Commutators
D. Magnets

Q.133 If number of loops are increased than according to Faraday law ___ will increase
A. Voltage
B. Electric field
C. Magnetic field
D. All of these

Q.134 If the number of flux passing through a coil per unit time is doubled then motional emf also
A. Halves
B. Triples
C. Doubles
D. Remains unchanged

Q.135 Mutual inductance has a practical role in performance of
A. AC generator
B. Radio choke
C. DC generator
D. Transformer

Q.136 Energy stored inside the inductor is given by
A. (1/2)LI2
B. LI2
C. (3/2)LI2
D. LI

Q.137 An object moving in a circle is tied to a string. What happens when the string is cut?
A. It continues moving in a circle
B. It flies off along a tangent
C. It falls straight down
D. None of these

Q.138 Electric generator converts _____ to _____ energy
A. Electric, mechanical
B. Mechanical, electric
C. Mechanical, potential
D. Not enough information

Q.139 The insulation between sheets of transformer core is to get small
A. Hysteresis loop
B. Eddy current
C. Both
D. None of these

Q.140 Electric field generated due to induction is
A. Conservative
B. Nonconservative
C. Depends on internal property
D. Not enough information

Q.141 Magnetic flux is _____ product
A. Scalar
B. Vector
C. Simple
D. None of these

Q.142 An ideal step-down transformer is connected to main supply of 240V. it is desired to operate 12V,30W lamp. What is the current in primary coil?
A. 0.125A
B. 0.5A
C. 125A
D. 12.5A

Q.143 Calculate the maximum emf when the velocity is 10m/s, the length is 3m and the magnetic field density is 5T:
A. 150V
B. 300V
C. 100V
D. 0V

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Q.144 Primary and secondary powers of a transformer are 200W and 100 W respectively, the efficiency of a transformer is

A. 50%
B. 1
C. 20%
D. 10%

Q.145 One of the major reasons for heat loss in transformer is

A. Radiation loss
B. Convection loss
C. Eddy current loss
D. None of these

Q.146 Transformer operates on

A. A.C
B. D.C
C. Both
D. None of these

Q.147 The role of inductance is equivalent to:

A. Inertia
B. Force
C. Energy
D. Momentum

Q.148 Self-inductance varies with the applied current in coil as

A. I_2
B. 1/I
C. I
D. Remains unchanged

Q.149 Emf produced in generator is

A. NwABcos(wt)
B. NwABtan(wt)
C. NwABcot(wt)
D. NwABsin(wt)

Q.150 Core of transformer is made up of

A. Copper
B. Aluminum
C. Iron
D. Steel

Q.151 An armature coil consists of 30 turns of wire, each of area A = 0.05 m^2 and total resistance of 10 Ω. It rotates in a magnetic field of 0.15T at an angular speed of 84 radian per second. Determine the value of maximum induced emf produced in the coil.

A. 1V
B. 500V
C. 63V
D. 43V

Q.152 Power transformers have maximum efficiency at

A. No load
B. Full load
C. Half load
D. Double load

Q.153 When currents are moving in the same direction in two conductors, then the force will be

A. Attractive
B. Repulsive
C. Retracting
D. Opposing

Q.154 An a.c. generator consists of a coil of 50 turns and an area 2.5 m^2 rotating at an angular speed of 60 rad s^{-1} in a uniform magnetic field of 0.3 T between two fixed pole pieces. What is the flux through the coil, when the current is zero?

A. Maximum
B. Minimum
C. Zero
D. Independent

Q.155 For given applied voltage, what will happen if we increase frequency of the applied voltage?

A. Eddy current loss will decrease
B. Eddy current loss will increase
C. Eddy current loss will remain unchanged
D. None of these

Q.156 A transformer has negative voltage regulation when its load power factor is

A. Lagging
B. Leading
C. Unity
D. Any of above

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Q.157 A cable 4 km long and of total resistance 1 ohm carries electric current from a generator producing 100kW at 10,000 Volts. The current in amperes in the cable is.

A. 10
B. 10,000
C. 1000
D. 100,000

Q.158 In order to enhance magnetic flux, the primary and secondary coils of the transformer are wound on:

A. Soft iron core
B. Iron core
C. Hard iron core
D. Steel core

Q.159 Maximum emf generated in a generator is

A. $\varepsilon 0 = N\omega AB\sin\Theta$
B. $\varepsilon 0 = \varepsilon \sin\Theta$
C. $\varepsilon = \varepsilon 0 \sin\Theta$
D. $\varepsilon 0 = N\omega AB$

Q.160 Motional emf induced in a coil is independent of

A. Number of turns
B. Change in flux
C. Change in time
D. Resistance

Q.161 A transformer is used to light 100 W 25 volt lamp from 250 Volt ac mains. The current in the main cable is 0.5 A. Calculate the efficiency of the transformer

A. 50%
B. 60%
C. 90%
D. 80%

Q.162 Transformation ratio of transformer is given by

A. Vs/Vp
B. Ip/s
C. NsNp
D. All of these

Q.163 In a battery eliminator, the 220 Volts mains supply is stepped down to 11 volt, what is the transformation ratio?

A. 1:20
B. 20:1
C. 1:2
D. 2:5

Q.164 Motional emf can be produced with

A. Changing magnetic field in space
B. Changing magnetic field in time
C. Changing flux with space
D. Constant magnetic field

Q.165 Weber is the unit of_____

A. Magnetic flux
B. Electric flux
C. Both A or B
D. None of these

Q.166 If the instantaneous current in a circuit is given by I = A sin (wt) ampere, the rms value of the current is:

A. 2A
B. $A/\sqrt{2}$
C. $2\sqrt{2}A$
D. Zero

Q.167 Which of the following remains unchanged in transformer?

A. Voltage
B. Current
C. Power
D. Capacitance

Q.168 The root mean square value of the alternating current is equal to

A. Twice the peak value
B. Half the peak value
C. Equal to the peak value
D. $(1/\sqrt{2})$timesthepeakvalue

Q.169 If an A.C voltage rms value of 10 volt is applied as input of half wave rectifier, then the rms voltage value of D.C output will be

A. 10V
B. 10.3V
C. 10.7V
D. 9.3V

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Q.170 220V, 50 Hz AC supply is connected across a resistor of 50 k ohms. The current at time t Seconds, assuming that it is zero at t = 0, is

A. 4.4 sin(314t) mA
B. 4.4 sin(157t) mA
C. 6.2 sin(314t) mA
D. 6.2 sin(157t) mA

Q.171 Which of the following losses in a transformer is zero even at full load

A. Eddy current loss
B. Core loss
C. Copper loss
D. Friction loss

Q.172 The root mean square value of the alternating current is equal to

A. twice the peak value
B. half the peak value
C. equal to the peak value
D. $(1/\sqrt{2})$ timesthepeakvalue

Q.173 A transformer steps down from 200V to 50 V. It has secondary winding = 40 turns, then windings in. primary coil are

A. 150
B. 160
C. 170
D. 200

Q.174 Mutual inductance has a practical role in performance of

A. AC generator
B. radio choke
C. DC generator
D. Transformer

Q.175 The mutual induction happens in

A. AC generator
B. DC generator
C. Battery
D. Transformer

Q.176 The magnetic field is parallel to a surface, then the magnetic flux through the surface is:

A. zero
B. small but not zero
C. infinite
D. larger than 1

Q.177 The core of transformer is made up of

A. hard iron
B. Soft iron
C. Aluminium
D. Copper

ANSWER KEY

1	A	21	B	41	B	61	D	81	C	101	A	121	C	141	A	161	D
2	C	22	B	42	C	62	A	82	C	102	D	122	A	142	A	162	A
3	C	23	B	43	D	63	D	83	B	103	C	123	B	143	A	163	A
4	A	24	B	44	A	64	B	84	C	104	B	124	B	144	A	164	B
5	D	25	A	45	A	65	D	85	A	105	B	125	A	145	C	165	A
6	A	26	A	46	B	66	B	86	D	106	B	126	C	146	A	166	B
7	C	27	C	47	C	67	D	87	A	107	D	127	B	147	A	167	C
8	D	28	A	48	C	68	C	88	B	108	A	128	D	148	D	168	D
9	B	29	D	49	B	69	A	89	B	109	C	129	B	149	D	169	D
10	A	30	A	50	C	70	D	90	A	110	C	130	D	150	C	170	C
11	A	31	A	51	A	71	B	91	D	111	A	131	B	151	C	171	D
12	A	32	B	52	D	72	C	92	C	112	C	132	B	152	B	172	D
13	B	33	C	53	C	73	D	93	B	113	A	133	D	153	A	173	B
14	D	34	C	54	A	74	B	94	D	114	A	134	C	154	A	174	D
15	A	35	A	55	B	75	A	95	D	115	C	135	D	155	C	175	D
16	A	36	B	56	D	76	B	96	A	116	A	136	A	156	B	176	B
17	D	37	A	57	A	77	A	97	C	117	C	137	B	157	D	177	B
18	B	38	C	58	D	78	B	98	B	118	B	138	B	158	A		
19	B	39	A	59	B	79	B	99	D	119	A	139	B	159	A		
20	B	40	D	60	D	80	C	100	A	120	B	140	A	160	A		

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10 TOPIC ELECTRONICS PRACTICE EXERCISE

PM
Q.1

Q.1 Transformer is used in rectifier to
A. step up voltage
B. step down voltage
C. both A and B
D. output power increase

Q.2 Which has less ripple factor
A. Half wave rectifier
B. Full wave rectifier
C. Both
D. None

Q.3 Ripple factor of full wave rectifier?
A. 0.482
B. 1.21
C. 0.21
D. 0.84

Q.4 The work done by the electric field on a particle when it is moved from one point on an equipotential surface to another point on the same equipotential surface is
A. qE x d
B. Maximum
C. May be zero
D. Always Zero

Q.5 If Input Free is 50Hz for Full Wave Rectifier, Then Ripple Frequency will be
A. 100 Hz
B. 50 Hz
C. 150 Hz
D. 25 Hz

Q.6 If Input Voltage of Input De if 10 V for Full Wave Rectifier Output De Voltage will be:
A. 8
B. 5
C. 10
D. 20

Q.7 Transistor is us1ed to Convert .....
A. Half wave
B. Full wave
C. Both
D. None

Q.8 Bridge rectifier is used more than full rectifier bcz
A. performs on less secondary voltage
B. no center tap transformer required
C. power loss is minimum
D. All of them

Q.9 The half wave rectifier have input l0V its de component is
A. $10/\pi$
B. 0
C. 1π
D. 2π

Q.10 Half wave Rectifier contain, how many Diodes
A. 2
B. 3
C. 4
D. 1

Q.11 Ripple factor of half wave rectifier?
A. 0.482
B. 1.21
C. 0.21
D. 0.84

Q.12 The efficiency of full wave rectifier?
A. 40.6 %
B. 10.6 %
C. 81.2 %
D. 0.84%

Q.13 In peak rectifier Vp=100 and R=10Kilo ohm f=60Hz....find the factor for which diode is conducting
A. 1.0 %
B. 2.0 %
C. 3.0 %
D. 4.02 %

Q.14 Bridge rectifier is an alternative for
A. Full wave rectifier
B. Peak rectifier
C. Half wave rectifier
D. None of the mentioned

Q.15 A rectifier is a
A. Bilateral device
B. Linear device
C. Non-linear device
D. Passive device.

Q.16 The ripple factor indicates the number of ripples in the
A. A.C output
B. D.C output
C. A.C input
D. none of these

Q.17 The ripple factor $\gamma =$
A. $\sqrt{\left(\frac{V_{rms}}{V_{DC}}\right)^2 - 1}$
B. $\sqrt{1-\left(\frac{V_{rms}}{V_{DC}}\right)}$
C. $\sqrt{\left(\frac{V_{DC}}{V_{rms}}\right)^2 - 1}$
D. $\sqrt{1-\left(\frac{V_{DC}}{V_{rms}}\right)}$

Q.18 Rectifier circuits are?
A. single-phase
B. multi-phase
C. Both A and B
D. Can not say

Q.19 If peak Voltage across a full wave rectifier is 20V then V_{rms} is
A. 7.07
B. 14.14 v
C. 16.8V
D. 12V

Q.20 Transistors can be used as:
A. half wave rectifier
B. full wave rectifier
C. both
D. none of these

Q.21 Maximum efficiency of half wave rectifier is
A. 80.6 %
B. 40.60%
C. 70%
D. 50%

Q.22 A full wave rectifier uses load resistor of 1500Ω. Assume the diodes have Rf=10Ω, Rr=∞. The voltage applied to diode is 30V with a frequency of 50Hz. Calculate the AC power input:
A. 358.98mW
B. 275.2 mW
C. 145.76 mW
D. 456.78 mW

Q.23 In a half wave rectification, during negative cycle of the wave the diode is:
A. reversed biased
B. forward biased
C. potential barrier
D. none of these

Q.24 If a half wave rectifier is used to convert 50Hz AC into DC, then the number of pulses present in rectifier voltage is
A. 25
B. 50
C. 100
D. 75

Q.25 Ripple factor is defined as
A. Irms/Vrms
B. Idc/Irms
C. Irms/I dc
D. Irms + I dc

Q.26 The bridge rectifier is preferred to an ordinary two diode full wave rectifier because
A. it needs much smaller transformer for the same output
B. no center tap required
C. less PIV rating per diode
D. All of the above

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Q.27 Half wave rectifier uses
A. one diode
B. two diode
C. three diodes
D. Four diodes

Q.28 Transformer is used in rectification to _____ the supply voltage
A. step up
B. step down
C. equalize
D. none of them

Q.29 Transistors can be used as
A. half wave rectifier
B. full wave rectifier
C. both
D. none of these

Q.30 To get a peak load voltage of 40V out of a bridge rectifier, what should be the approximate rms value of secondary voltage?
A. 0V
B. 14.4V
C. 28.3V
D. 56.6 V

Q.31 Rectifier is a device which converts
A. AC to DC
B. DC to AC
C. AC to triangular current
D. DC to triangular current

Q.32 Consider a peak rectifier fed by a 60-Hz sinusoid having a peak value Vp = 100V. Let the load resistance R = 10 kΩ. Calculate the fraction of the cycle during which the diode is conducting
A. 1.06 %
B. 2.06%
C. 3.18 %
D. 4.82%

Q.33 Which of the following are component of half wave rectifier
A. transformer
B. load resistance
C. power supply
D. All of the above

Q.34 Centre tape rectifier circuit consists of _____ diode
A. 1
B. 2
C. 3
D. 4

Q.35 The output voltage of a rectifier is
A. smooth
B. pulsating
C. perfectly direct
D. alternating

Q.36 The basic purpose of filter is to
A. minimize variation in ac signal
B. suppress harmonics in rectified output
C. remove ripples from the rectified output
D. stabilize dc output voltage

Q.37 In a half wave rectification, the diode conducts during
A. both half cycles
B. positive half
C. negative half
D. none of these

Q.38 The use of a capacitor filter in a rectifier circuit gives satisfactory performance only when the load:
A. Current is high
B. Current is low
C. Voltage is high
D. Voltage is low

Q.39 The maximum efficiency of full wave rectifier is
A. 80.60%
B. 40.60%
C. 70%
D. 50%

Q.40 Half wave voltage multiplier can provide any degree of voltage multiplication by cascading diodes and capacitors.
A. any doubler
B. any tripler
C. any multiplication
D. none of them

Q.41 Ripple factor of full wave rectifier is
A. 1.21
B. 0.6
C. 0.482
D. 0.9

Q.42 In half wave rectification, the output DC voltage is obtained across the load for
A. the positive half cycle of input AC
B. the negative half cycle of input AC
C. the positive and negative half cycles of input AC
D. Either positive or negative half cycle of input AC

Q.43 A half wave rectifier is equivalent to
A. Clamper
B. Clipper
C. Clamper circuit with negative bias
D. Clamper circuit with positive bias

Q.44 Ripple factor of half wave rectifier is
A. 1.11
B. 0.8
C. 0.6
D. 0.4

Q.45 The use of a capacitor filter in a rectifier circuit gives satisfactory performance only when the load:
A. Current is high
B. Current is low
C. Voltage is high
D. Voltage is low

Q.46 Half wave rectifier uses
A. one diode
B. two diode
C. three diodes
D. Four diodes

Q.47 The number of diodes in bridge rectifier is
A. 4
B. 3
C. 2
D. 5

Q.48 In half wave rectification, the output DC voltage is obtained across the load for
A. the positive half cycle of input AC
B. the negative half cycle of input AC
C. the positive and negative half cycles of input AC
D. Either positive or negative half cycle of input AC

Q.49 A circuit that adds positive or negative dc voltage to an input sine wave is called
A. Clamper
B. clipper
C. diode clamp
D. limiter

Q.50 In full wave rectifier with input frequency 50 Hz the ripple in the output is mainly of frequency:
A. 25 Hz
B. 50Hz
C. 100Hz
D. zero

Q.51 A half wave rectifier is operating from 50 Hz mains. Fundamental frequency of ripple will be
A. 100 Hz
B. 25 Hz
C. 200Hz
D. 50Hz

Q.52 Non-inverting amplifier circuits have
A. A very high input impedance
B. A very low input impedance
C. A low output impedance
D. None of the above

Q.53 Which of the following rectifier uses Wheatstone bridge to rectify signal
A. half wave
B. full wave
C. bridge
D. All of the above

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Q.54 A full wave rectifier passes _____ into positive cycles

A. lower half cycle
B. upper half cycle
C. both cycles
D. none of them

Q.55 In which rectifier ripple factor is less

A. full wave
B. half wave
C. both a) and b)
D. none of them

Q.56 In a rectifier, larger the value of shunt capacitor filter

A. larger the peak-to-peak value of ripple voltage
B. larger the peak current in the rectifying diode
C. longer the time that current pulse flows through the diode
D. smaller the dc voltage across the load

Q.57 Average dc Voltage across the load in terms of Vmax is

A. $0.532\ V_{max}$
B. $0.637V_{max}$
C. $0.759V_{max}$
D. $0.437V_{max}$

Q.58 In a bridge type full wave rectifier, if Vm is the peak voltage across the secondary of the transformer, the maximum voltage coming across each reverse biased diode is

A. Vm
B. $Vm/\sqrt{2}$
C. 2Vm
D. Vm/3

Q.59 Peak voltage in the output of half wave rectifier is 10V so dc component of output voltage is

A. $10\sqrt{2}$
B. $10/\sqrt{2}$
C. $10/\pi$
D. 10π

ANSWER KEY

1	B	11	B	21	B	31	A	41	C	51	D
2	B	12	C	22	B	32	C	42	D	52	A
3	B	13	D	23	A	33	D	43	B	53	C
4	D	14	A	24	B	34	B	44	A	54	C
5	A	15	B	25	C	35	B	45	B	55	A
6	C	16	B	26	D	36	C	46	A	56	C
7	D	17	A	27	A	37	B	47	A	57	B
8	D	18	A	28	B	38	B	48	D	58	A
9	A	19	B	29	D	39	A	49	A	59	C
10	D	20	D	30	D	40	C	50	C		

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11 TOPIC DAWN OF MODERN PHYSICS

PRACTICE EXERCISE

Q.1 Plank's quantum theory was incomplete agreement with the experiments of
A. Black body radiation
B. Diffraction of light
C. Pair production
D. de-Broglie hypothesis

Q.2 Photon is made up _____ quarks
A. Basons
B. no quark
C. quarks in hadrons
D. masons

Q.3 Electrons are accelerated in electron microscope to produce
A. X-rays
B. β-rays
C. High resolution image
D. None

Q.4 If clouds were black body _____ what would happen?
A. will receive no light on surface
B. some light would reach surface
C. reflects back
D. absorbs light

Q.5 Black body radiation light
A. emit
B. absorbed
C. Both
D. None

Q.6 Find De-Broglie wave wavelength if mass of 150g and velocity is 50m/s
A. 3.1×10^{-38} m
B. 8.81×10^{-33} m
C. 4.41×10^{-34} m
D. 3.31×10^{-38} m

Q.7 Planck's constant was named after scientist
A. Planck
B. Maxwell
C. Einstein
D. None

Q.8 According to Planck's quantum theory:
A. a body emits energy in quanta
B. a body absorb quanta energy in quanta
C. emits or absorb radiations discontinuously
D. All of these

Q.9 By Wein's constant the wavelength and temperature Are related.
A. inversely
B. directly
C. equal
D. None

Q.10 If wavelength = 500 nm of a photon, then its frequency is:
A. 5×10^{14} Hz
B. 6×10^{14} Hz
C. 7×10^{14} Hz
D. 8×10^{14} Hz

Q.11 Photoelectric effect is not given by
A. X-rays
B. Gamma
C. Beta
D. All

Q.12 Wave nature of electron reasmble with
A. Alpha
B. beta
C. gamma
D. x-rays

Q.13 When electron and positron combine
A. Annihilation occurs
B. Pair production
C. Photoelectric effect
D. None

Q.14 Find E in ev "'Photon Wavelength was given 1440nm"
A. 0.867 Ev
B. 18.67 eV
C. 9.32 Ev
D. 0.932 eV

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Q.15 Einstein was awarded Nobel prize:
A. Photoelectric effect
B. Compton effect
C. Pair production
D. None

Q.16 When electrons fall on Al foil then which Ray emit
A. Blue
B. Violet
C. White
D. None

Q.17 Which is incorrect for photon
A. $P = h/\lambda$
B. $E = hv$
C. $E = h\lambda$
D. $E = hc/\lambda$

Q.18 What is the relation between mass and energy?
A. $E = Mc^2$
B. $E = C/m^2$
C. $E = M^2C$
D. None

Q.19 Rest mass of electron is
A. 9.1×10^{11}kg
B. zero
C. 1.62×10^{-19}kg
D. None

Q.20 Compton shift is maximum at
A. 90°
B. 0°
C. 180°
D. None

Q.21 The Light we are seeing is
A. Visible
B. Infrared
C. Ultraviolet
D. None

Q.22 Electron Microscope produce
A. 20 image
B. 30 image
C. HD image
D. None

Q.23 If velocity Becomes 5 times, what happened to De Broglie Wavelength
A. Decrease by 5 times
B. Increase by 5 times
C. both
D. None

Q.24 Which one of the following radiations has the strongest photon?
A. T.V waves
B. Microwaves
C. X-rays
D. γ-rays

Q.25 The linear momentum of a photon is
A. Zero
B. Hv/c^2
C. Hv/c
D. c^2/hv

Q.26 The linear momentum of an X-ray photon of wavelength 0.1A is
A. 6.625×10^{23}N-s
B. 66.25×10^{23}N-s
C. 662.5×10^{23}N-s
D. Data is insufficient

Q.27 If a material object moves with speed of light its mass becomes
A. Equal to its rest mass
B. Double of its rest mass
C. Infinite
D. Zero

Q.28 A photon is
A. A unit of energy
B. A positively charged particle
C. A quantum of electromagnetic radiation
D. A unit of wavelength

Q.29 A photon of wavelength 900nm behaves like a particle of mass
A. 5.53×10^{-36}kg
B. 0 kg.
C. 2.46×10^{-36}kg
D. 1.84×10^{-44}kg

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Q.30 In an electron microscope, we use energetic particles because of
A. Penetrating power is high
B. Kinetic energy is large
C. Wavelength is very short
D. All the above reasons

Q.31 The energy radiated is directly proportional to the fourth power of Kelvins temperature is
A. Karl-Weins law
B. Rayleigh-Jeans law
C. Stephens law
D. Plancks

Q.32 Which photon is more energetic: A red one or a violet one?
A. Both
B. Red
C. Violet
D. Neither

Q.33 Which theory of light is wave theory or particle theory?
A. Dynamic physics
B. Static physics
C. Quantum mechanics
D. de – Broglie hypothesis

Q.34 What type of nature do electromagnetic waves have?
A. Dual nature
B. Wave nature
C. Particle nature
D. Photon nature

Q.35 Identify the de – Broglie expression from the following.
A. $\lambda=h\times p$
B. $\lambda=h/p$
C. $\lambda=h+p$
D. $\lambda=h-p$

Q.36 Photocell is a device to
A. Store photons
B. Measure light intensity
C. Convert photon energy into mechanical energy
D. Store electrical energy for replacing storage batteries

Q.37 Photons are deflected by
A. electric field only
B. magnetic field only
C. electromagnetic field
D. None of these

Q.38 Electrically, photons are
A. positively charged
B. negatively charged
C. neutral
D. strongly charged, may be positive or negative

Q.39 Which of the following shows particle nature of light?
A. Refraction
B. Interference
C. Polarization
D. Photoelectric effect

Q.40 The maximum value of photoelectric current is called
A. base current
B. saturation current
C. collector current
D. emitter current

Q.41 Which phenomenon best supports the theory that matter has a wave nature?
A. Electron momentum
B. Electron diffraction
C. Photon momentum
D. Photon diffraction

Q.42 A photon will have less energy, if its
A. amplitude is higher
B. frequency is higher
C. wavelength is longer
D. wavelength is shorter

Q.43 The mass of a moving photon is:
A. hv/c^2
B. hv/c
C. hv
D. zero

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Q.44 The wavelength of de Broglie waves is independent of:
A. charge B. momentum
C. velocity D. mass

Q.45 The fast-moving light photons are
A. alpha radiation B. gamma radiation
C. beta radiations D. no radiations

Q.46 Which rays has highest mass
A. Alpha rays B. Beta rays
C. Gamma rays D. None of these

Q.47 Which of the following blocks will release heat fast
A. rough white surface B. polished white surface
C. rough black surface D. polished black surface

Q.48 Which color of heat shows highest temperature
A. red B. blue
C. black D. orange

Q.49 Which light has more velocity
A. He-Ne laser B. white
C. yellow D. all are equal

Q.50 Why x-rays are used in crystallography
A. to prevent interference B. to prevent diffraction
C. to perform interference D. to perform diffraction

Q.51 Blackbody shows a _____ spectra.
A. continuous B. discrete
C. both a) and b) D. None of these

Q.52 The value of Rydberg constant varies with atomic number as
A. Z^3 B. $1/Z^2$
C. Z^2 D. Z

Q.53 LED TV produce ____ radiation
A. alpha B. beta
C. gamma D. none of these

Q.54 Atomic spectra is a _____ spectra
A. continuous B. discrete
C. both a) and b) D. None of these

Q.55 Coherent source of light means
A. multiple wavelength B. double wavelength
C. single wavelength D. coherent photons

Q.56 The wavelength of beta rays is measured by
A. interference B. polarization
C. absorption D. diffraction

Q.57 Which of the following is the rapid process
A. conduction B. radiation
C. convection D. all of these

Q.58 The Davisson Germer experiment is used to explain
A. interference B. polarization
C. diffraction D. none of these

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Q.59 The speed of photons in vacuum is ___ than in liquid water
A. higher
B. smaller
C. equal
D. none of these

Q.60 The star which is very hot will emit____ color
A. Blue
B. red
C. orange
D. orange

Q.61 The radiation reached on earth by sun is:
A. alpha
B. beta
C. gamma
D. all of these

Q.62 The black body always _____ radiations
A. emit
B. absorb
C. both a and b
D. reflects

Q.63 Sun spectra also has dark lines in pattern which corresponds to
A. absorption
B. emission
C. release
D. free particle

Q.64 A person with dark skin will feel
A. more heat
B. more cold
C. both a and b
D. heat doesn't depend on skin color

Q.65 The spectrum of perfect black body is
A. line
B. continuous
C. band
D. all of these

Q.66 A body at temperature T radiates heat according to relation
A. T^2
B. T^4
C. T^{-4}
D. none of these

Q.67 Which rays have highest charge
A. alpha
B. beta
C. amma
D. none of these

Q.68 Excited atoms returns to ground state in _____ time
A. 1 ns
B. 2ns
C. 3ns
D. all of these

Q.69 Electron cannot reside inside nucleus is explained by
A. Compton effect
B. Photoelectric effect
C. Zeeman effect
D. Uncertainty principle

Q.70 The good absorbers of heat normally are
A. poor conductor
B. good conductor
C. poor reflector
D. none of these

Q.71 Which of the constants is not related to radiation
A. Boltzmann
B. planck
C. solar constant
D. all of these

Q.72 UV radiation is formed by bombarding gas molecules with
A. electron
B. protons
C. alpha rays
D. any of these

Q.73 The frame of reference could be
A. fixed always
B. not fixed always
C. at rest
D. none of these

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Q.74 He-Ne laser light has wavelength of:
A. RED
B. YELLOW
C. BLUE
D. ORANGE

Q.75 The linear momentum of a 3 MeV photon is:
A. 0.01eV s m−1
B. 0.01eV s m−1
C. 0.03eV s m−1
D. 0.04eV s m−1

Q.76 What is the frequency of a photon whose energy is 66.3 eV
A. 12.6x106 Hz
B. 19.6x106 Hz
C. 1.6x1016 Hz
D. 81.6x106 Hz

Q.77 In annihilation process..... are produced:
A. Positron
B. Photons
C. Electrons
D. B & C are correct

Q.78 Platinum wire becomes yellow at a temperature of _____ degree C.
A. 900
B. 500
C. 1300
D. 1600

Q.79 Numbers of photon electrons emitted from metal depends upon:
A. Intensity of incident light
B. Energy of incident light
C. Wavelength of incident light
D. None of these

Q.80 Einstein was awarded Nobel Prize for his work on
A. Photoelectric effect
B. Nuclear fission
C. Theory of relativity
D. All are correct

Q.81 If two photons interact in same direction what will change
A. Mass
B. Energy
C. Intensity
D. None of these

Q.82 In pair production..... are produced:
A. positron & electron
B. Photons
C. Electron & neutron
D. B & C are correct

Wave nature and particle nature of photon is linked by:
A. Rest mass of photon
B. Wavelength of photon
C. Light speed
D. Momentum of photon

34 The photon is the particle, which has:
A. Infinite rest mass
B. Rest mass but no charge
C. No rest mass & no charge
D. A & C are correct

Q.85 What is the energy of a photon in a beam of infrared radiation of wavelength 1240 nm? Give your answer in eV.
A. 1
B. $6.25x10^{18}$
C. $1.6x10^{-19}$
D. $3.6x10^{6}$

Q.86 Joule - second is the unit of:
A. Energy
B. Heat
C. Work
D. Planck'sconstant

Q.87 Among the following four spectral regions, in which of them, the photon has the highest energy in?
A. Infrared
B. Violet
C. Blue
D. Ultraviolet

Q.88 Charge of photon is
A. 0
B. positive
C. negative
D. positive/negative

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Q.89 **The wavelength of matter wave is independent of:**
A. Mass
B. Velocity
C. Kinetic energy
D. Charge

Q.90 **Existence of photon was confirmed by:**
A. Compton
B. De-broglie
C. Einstein
D. Max planck

Q.91 **The photon when scattered from mirror its momentum becomes**
A. Double
B. Half
C. Remain same
D. Zero

Q.92 **From the following properties of a wave, the one that is independent of the other is its**
A. Amplitude
B. Frequency
C. Wavelength
D. Time period

Q.93 **Which among the following phenomenon shows particle nature of light?**
A. Photoelectric effect
B. Interference
C. Polarization
D. Matter waves

Q.94 **Calculate the energy of a photon of wavelength 6600 angstroms.**
A. 0.3×10^{-19}J
B. 3×10^{-19}J
C. 30×10^{-19}J
D. 300×10^{-19}J

Q.95 **Wave theory of light is unable to prove:**
A. Black body radiation
B. Photoelectric effect
C. Compton effect
D. All of them

Q.96 **Momentum of a photon is**
A. 0
B. α
C. hf/c
D. mv

Q.97 **_____ is conserved in pair production**
A. charge
B. momentum
C. both a & B
D. none of these

Q.98 **The reverse process of pair production is known as :**
A. Annihilation of energy
B. Anti Pair production
C. Materialization of matter
D. Annihilation of practical into its antiparticle

Q.99 **What is the de Broglie wavelength associated with an electron, accelerated through a potential difference of 200 volts?**
A. 1nm
B. 0.5nm
C. 0.0056 nm
D. 0.086 nm

Q.100 **Black body radiations are:**
A. Infrared and visible light rays
B. All radiations
C. Visible light and ultraviolet rays
D. Ultraviolet and X-rays

Q.101 **Planck's constant is analogous to:**
A. Inertia
B. Wave nature
C. Angular momentum
D. Linear momentum

Q.102 **Which source is associated with a line emission spectrum**
A. Electric signal
B. Neon street signal
C. Red traffic light
D. Signal

Q.103 **Photocell is similar to**
A. Photoelectric effect
B. Compton effect
C. Photoluminescence
D. None of these

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Q.104 Where does the energy lost by fast moving electron goes:
A. Appears as photon
B. Appears as electron - positron pair
C. Appears as its K.E.
D. It vanishes

Q.105 Range of wavelength of visible light is:
A. 700˚A - 1000˚A
B. 1nm - 100nm
C. 0.1nm - 1nm
D. 4000˚A- 7000˚A

Q.106 The frequency of the incident photon after compton effect will:
A. Remain constant
B. Increases
C. Decreases
D. None of these

Q.107 The electron is purely a ____ when free
A. particle nature
B. wave nature
C. dual nature
D. it transform to photon

Q.108 Which of the following statements is incorrect about the photons:
A. Momentum of photon h/λ
B. Rest mass of photon is zero
C. Photon exert no pressure
D. Energy of photon is hv

Q.109 In Compton'scattering process, wavelength of scattered X-rays:
A. Remains same
B. Increases
C. Decreases
D. None of these

Q.110 Planck constant is named after:
A. Einstein
B. newton's
C. Maxwell
D. none of these

Q.111 Which principle is used in solar cells?
A. momentum
B. charge
C. mass
D. all of these

Q.112 In case of spectrometer circular scale, graduated in half degree, is attached with:
A. Telescope
B. Turntable
C. Cross wire of telescope
D. None of these

Q.113 Identify the de Broglie expression from the following.
A. λ=hxp
B. λ=h/p
C. λ=h+p
D. λ=h-p

Q.114 Numbers of electrons emitted in photoelectric effect depends upon
A. wavelength of incident light
B. frequency of incident light
C. energy of incident light
D. intensity of incident light

Q.115 The momentum of the moving photon is:
A. Zero
B. $h\lambda$
C. λ/h
D. h/λ

Q.116 What will be the de – Broglie wavelength when the kinetic energy of the electron increases by 5 times?
A. $\sqrt{5}$
B. 5
C. $1/\sqrt{5}$
D. 1/5

Q.117 Dual nature of light is proved by:
A. Davisson and German's experiment
B. Black body radiation
C. Compton 's effect
D. Photoelectric effect

Q.118 Energy of photon is directly proportional to its:
A. Temperature
B. Frequency
C. Wave length
D. None of the above

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Q.119 Which light photon has the least momentum?
A. red
B. green
C. yellow
D. blue

Q.120 In medical scanning _____ rays are used.
A. photon
B. x
C. beta
D. white

Q.121 A beam of electrons can:
A. reflect
B. refract
C. both
D. none of these

Q.122 Inertial frame has:
A. Constant velocity
B. Zero velocity
C. Zero acceleration
D. All of these

Q.123 In annihilation process particles move in
A. same direction
B. opposite direction
C. perpendicular direction
D. none of these

Q.124 Wave particle duality does not explain
A. momentum
B. frequency
C. mass
D. all of these

Q.125 The black body which is close to perfect body is:
A. Translucent glass box
B. Cavity Radiator
C. Black holes
D. All of these

Q.126 A three-dimensional image is achieved by scanning the surface with a focused beam of electrons
A. SEM
B. TEM
C. XRD
D. None of these

Q.127 The bound state electron have
A. wave nature
B. particle nature
C. dual nature
D. it never moves when in bound state

Q.128 Platinum wire becomes yellow at a temperature of_____ degree C.
A. 900
B. 500
C. 1300
D. 1600

Q.129 When electron strikes with Al plate which photon is emitted
A. blue
B. white
C. purple
D. none of these

Q.130 Galilean transformations are applicable in:
A. All frames
B. frame of reference
C. Non-Inertial frame
D. Inertial frame

Q.131 Which is not the result of special theory of relativity
A. Length contraction
B. Space - time transformation
C. Time dilation
D. Mass variation

Q.132 Wave particle duality does not explain
A. Momentum
B. Frequency
C. Mass
D. All of these

Q.133 What will be the photon energy for a wavelength of 5000 angstroms, if the energy of a photon corresponding to a wavelength of 7000 angstroms is 4.23 × 10-19 J?
A. 0.456 eV
B. 5.879 eV
C. 3.701 eV
D. 1.6 x 10^-19 Ev

Q.134 When electron strikes with Al plate which photon is emitted
A. blue
B. white
C. purple
D. none of these

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Q.135 The black body which is close to perfect body is:
A. Translucent glass box
B. Cavity Radiator
C. Black holes
D. All of these

Q.136 What is the de Broglie wavelength of a ball of mass 150g moving at a speed of 50 m/s?
A. 8.8x10-34m
B. 8.8x10-35m
C. 8.8x10-20m
D. 8.8x10-25m

Q.137 Which is not the result of special theory of relativity
A. Length contraction
B. Space - time transformation
C. Time dilation
D. Mass variation

Q.138 The final image produced by electron microscope can be seen
A. on electron micrograp
B. scanning micrometer
C. on fluorescent screen
D. none of these

Q.139 In annihilation process particles move in:
A. same direction
B. opposite direction
C. perpendicular direction
D. none of these

Q.140 Radiation can cause
A. burning
B. cancer
C. flu
D. all of these

Q.141 Black body radiations are:
A. Infrared and visible light rays
B. All radiations
C. Visible light and ultraviolet rays
D. Ultraviolet and X-rays

Q.142 Dual nature of light is proved by:
A. Davisson and German's experiment
B. Black body radiation
C. Compton's effect
D. Photoelectric effect

Q.143 What is the de Broglie wavelength associated with an electron, accelerated through a potential difference of 200 volts?
A. 1nm
B. 0.5nm
C. 0.0056 nm
D. 0.086 nm

Q.144 Mass and energy are related to each other by
A. Newton's law
B. Einstein law
C. Coulomb law
D. all of these

Q.145 The existence of positron was discovered in the
A. thermal radiation
B. cosmic radiation
C. electromagnetic radiation
D. non-electromagnetic radiation

Q.146 Pair production is possible in _____ Photon
A. x rays
B. beta rays
C. gamma rays
D. all of these

Q.147 From the following properties of a wave, the one that is independent of the other is its
A. Amplitude
B. Frequency
C. Wavelength
D. Time period

Q.148 In annihilation process particles move in
A. Same direction
B. Opposite direction
C. Perpendicular direction
D. None of these

Q.149 The linear momentum of a 3 MeV photon is:
A. 0.01 eV s m^{-1}
B. 0.01 eV s m^{-1}
C. 0.03 eV s m^{-1}
D. 0.04 eV s m^{-1}

Q.150 What is the frequency of a photon whose energy is 66.3 eV
A. $12.6x10^{6}$Hz
B. $19.6x10^{6}$Hz
C. $1.6x10^{15}$Hz
D. $81.6x10^{6}$Hz

Q.151 In annihilation process..... are produced:
A. Positron
B. Photons
C. Electrons
D. B & C are correct

Q.152 Platinum wire becomes yellow at a temperature of _____ degree C
A. 900
B. 500
C. 1300
D. 1600

Q.153 Numbers of photon electrons emitted from metal depends upon:
A. Intensity of incident light
B. Energy of incident light
C. Wavelength of incident light
D. Frequency of incident light

Q.154 If two photons interact in same direction what will change
A. mass
B. energy
C. intensity
D. none of these

Q.155 In pair production..... are produced:
A. positron & electron
B. Photons
C. Electron & neutron
D. B & C are correct

Q.156 Wave nature and particle nature of photon is linked by:
A. Rest mass of photon
B. Wavelength of photon
C. Light speed
D. Momentum of photon

Q.157 The photon is the particle, which has:
A. Infinite rest mass
B. Rest mass but no charge
C. No rest mass & no charge
D. A & C are correct

Q.158 Joule – second is the unit of:
A. Energy
B. Heat
C. Work
D. Planck's constant

Q.159 Charge of photon is
A. 0
B. positive
C. negative
D. positive/negative

Q.160 The photon when scattered from mirror its momentum becomes
A. double
B. half
C. remains same
D. zero

Q.161 Which among the following phenomenon shows particle nature of light?
A. Photoelectric effect
B. Interference
C. Polarization
D. Matter waves

Q.162 Calculate the energy of a photon of wavelength 6600 angstroms.
A. 0.3×10^{-19}J
B. 3×10^{-19}J
C. 30×10^{-19}J
D. 300×10^{-19}J

Q.163 When gamma photon is entered in nucleus it_____
A. de-excite the atom
B. excite the atom
C. scatter by atom
D. none of these

Q.164 _____ is conserved in pair production
A. charge
B. momentum
C. both a & B
D. none of these

Q.165 What is the de Broglie wavelength associated with an electron, accelerated through a potential difference of 200 volts?
A. 1nm
B. 0.5nm
C. 0.0056 nm
D. 0.086 nm

Q.166 The frequency of the incident photon after Compton effect will :
A. remains constant
B. Increases
C. Decreases
D. None of these

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Q.167 The electron is purely a ____ when free

A. particle nature
B. wave nature
C. dual nature
D. it transforms to photon

Q.168 If the temperature of Sun is doubled heat energy reached on earth become:

A. three times
B. sixteen times
C. four times
D. same

ANSWER KEY

1	A	21	A	41	B	61	D	81	C	101	C	121	C	141	B	161	A
2	B	22	C	42	C	62	C	82	A	102	B	122	D	142	A	162	B
3	C	23	A	43	D	63	B	83	D	103	A	123	B	143	D	163	D
4	D	24	D	44	A	64	C	84	C	104	A	124	B	144	B	164	C
5	C	25	A	45	B	65	B	85	A	105	D	125	B	145	B	165	D
6	B	26	A	46	A	66	B	86	D	106	C	126	A	146	C	166	C
7	A	27	C	47	D	67	A	87	D	107	C	127	C	147	A	167	C
8	D	28	C	48	B	68	D	88	A	108	C	128	C	148	B	168	B
9	A	29	B	49	D	69	D	89	D	109	B	129	D	149	A		
10	B	30	D	50	D	70	B	90	A	110	D	130	A	150	C		
11	D	31	C	51	A	71	B	91	A	111	A	131	B	151	D		
12	D	32	C	52	D	72	A	92	A	112	B	132	D	152	C		
13	A	33	D	53	D	73	D	93	A	113	B	133	C	153	A		
14	A	34	A	54	B	74	A	94	B	114	D	134	D	154	B		
15	A	35	B	55	D	75	A	95	C	115	D	135	B	155	A		
16	B	36	C	56	A	76	C	96	C	116	C	136	B	156	B		
17	C	37	D	57	B	77	B	97	C	117	A	137	B	157	B		
18	A	38	C	58	D	78	C	98	A	118	B	138	C	158	D		
19	D	39	D	59	A	79	A	99	D	119	A	139	B	159	A		
20	C	40	B	60	B	80	A	100	B	120	B	140	D	160	C		

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12 TOPIC ATOMIC SPECTRA

PRACTICE EXERCISE

Q.1 LASER is a
A. Stimulated emission
B. Spontaneous emission
C. Both
D. None

Q.2 Time of reside of atom in excited state?
A. residual time
B. matastable
C. normal time
D. none

Q.3 Which rays are Used In LASAR?
A. electromagnetic Radiation
B. α -rays
C. β -rays.
D. None

Q.4 How many Hydrogens spectrum are there
A. 2
B. 3
C. 4
D. 5

Q.5 X- rays are produced from
A. Na
B. H
C. He
D. Cu

Q.6 Highest energy is in
A. Lyman series
B. Ballmer series
C. Pascha series
D. bracket series

Q.7 In electron A Move in the energy level n = I, While other electron Move in n = 3, What the ratio of electron Kinetic Energies A to B
A. 1 : 3
B. 9 : 1
C. 3 : 1
D. 1 : 9

Q.8 In a hydrogen atom, which of the following electronic transitions would involve the maximum energy change
A. n = 2 to n = 1
B. n = 3 to n = 1
C. n = 4 to n = 2
D. n = 3 to n = 2

Q.9 Hydrogen atom excites energy level from fundamental state to n = 3. Number of spectral lines according to Bohr, is
A. 4
B. 3
C. 1
D. 2

Q.10 The transition from the state n = 4 to n = 3 in a hydrogen like atom results in ultraviolet radiation. Infrared radiation will be obtained in the transition from
A. $2 \rightarrow 1$
B. $3 \rightarrow 2$
C. $4 \rightarrow 2$
D. $5 \rightarrow 4$

Q.11 In Bohr's model electrons are revolving in a circular orbits around the nucleus called as
A. stationary orbits
B. non radiating orbits
C. Bohr's orbits
D. all of these

Q.12 The first spectral series was discovered by
A. Balmer
B. Lyman
C. Paschen
D. Pfund

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Q.13 When electron jump into orbit 1 then series obtained is

A. Lyman
B. Paschen
C. Pfund
D. Brackett

Q.14 Atomic spectra is an example of?

A. line spectra
B. continuous spectra
C. band spectra
D. both a and b

Q.15 The energy of each orbit is

A. same
B. fixed
C. changes with time
D. none of the above

Q.16 Which is a non-central force?

A. Electrostatic force
B. Nuclear force
C. Gravitational force
D. Spring force.

Q.17 When an electron jumps from 3rd orbit to 2nd orbit, which series of spectral lines are obtained?

A. Balmer
B. Lyman
C. Paschen
D. Brackett

Q.18 The energy of electron in nth orbit of Hydrogen atom is

A. –0.0136 eV
B. –1.136 eV
C. 0.136 eV
D. None of these

Q.19 The white laser cannot be produced because

A. its is not coherent
B. it has low energy
C. it diffracts easily
D. all of these

Q.20 X-ray is the reverse process of:

A. Pair production
B. Compton effect
C. Photoelectric effect
D. A & B are correct

Q.21 Which light has more velocity

A. He-Ne laser
B. white
C. yellow
D. all of these

Q.22 Blackbody shows a _____ spectra.

A. continuous
B. discrete
C. both a) and b)
D. None of these

Q.23 Why x-rays are used in crystallography

A. to prevent interference
B. to prevent diffraction
C. to perform interference
D. to perform diffraction

Q.24 Which rays are lasers?

A. x-rays
B. beta rays
C. gamma rays
D. coherent photons

Q.25 The value of Rydberg constant varies with atomic number as

A. Z^3
B. $1/Z^2$
C. Z^2
D. Z

Q.26 Atomic spectra is a

A. continuous
B. discrete
C. both a) and b)
D. None of these

Q.27 Coherent source of light means

A. multiple wavelength
B. double wavelength
C. single wavelength
D. coherent photons

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Q.28 Laser light is
A. multi directional
B. bi-directional
C. uni-directional
D. none of these

Q.29 Which of the following is the rapid process
A. conduction
B. radiation
C. convection
D. all of these

Q.30 Bright Lines in pattern shows
A. absorption
B. emission
C. release
D. free particle

Q.31 An Ionic atom which is equivalent to hydrogen atom has wavelength equal to 1/4th of hydrogen lines is:
A. He+
B. Li++
C. Ne+9
D. Na10+

Q.32 Sun spectra also has dark lines in pattern which corresponds to
A. absorption
B. emission
C. release
D. free particle

Q.33 A person with dark skin will feel
A. more heat
B. more cold
C. both a and b
D. heat doesn't depend on skin color

Q.34 Excited atoms returns to ground state in _____ time
A. 1 ns
B. 2ns
C. 3ns
D. all of these

Q.35 Electron cannot reside inside nucleus is explained by
A. Compton effect
B. Photoelectric effect
C. Zeeman effect
D. Uncertainty principle

Q.36 He-Ne laser light has wavelength of:
A. RED
B. YELLOW
C. BLUE
D. ORANGE

Q.37 Which source is associated with a line emission spectra?
A. Electric fibre
B. Neon street sign
C. Red traffic light
D. Sun

Q.38 x-rays are diffracted from:
A. mirror
B. crystal
C. gas molecules
D. all of these

Q.39 Which ray shows comparable penetrating power to x rays:
A. alpha
B. beta
C. gamma
D. white

Q.40 Lifetime of an excited state is:
A. 10^{-6}s
B. 10^{-7}s
C. 10^{-8}s
D. 10^{-3}s

Q.41 Solar spectra is a type of:
A. continuous
B. discrete
C. both a) and b)
D. None of these

Q.42 In ground state, high energy photons will be
A. reflected
B. absorbed
C. transmitted
D. any of these

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Q.43 Spectra corresponding to sodium vapour lamp is

A. band spectra
B. line spectra
C. emission spectra
D. absorption spectra

Q.44 The sum of absorption and transmission of light in a medium is equal to

A. incident light
B. reflected light
C. any of a or b
D. none of these

Q.45 In ground state, high energy photons will be

A. reflected
B. absorbed
C. transmitted
D. any of these

Q.46 The characteristic x-rays are formed due to bombardment of:

A. photon
B. proton
C. electron
D. none of these

Which rays need medium to travel?

A. x-rays
B. beta rays
C. gamma rays
D. no radiation need medium to travel

The penetrating power of x rays depends on

A. frequency
B. amplitude
C. wavelength
D. all of these

9 The image received of absorbed x rays is

A. inverted
B. real
C. any of a or b
D. virtual

Q.50 Which one of them is a type of emission?

A. spontaneous
B. stimulated
C. both a) and b)
D. None of these

Q.51 Spectral lines is like a _____ of absorbed or emission energy in a spectrum

A. charged pattern
B. fingerprint pattern
C. discharged pattern
D. None of these

Q.52 x-rays used to measure

A. fractures
B. temperature
C. blood pressure
D. all of these

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Q.53 **The wavelength of x-ray is controlled by____**

A. increasing temperature
B. decreasing pressure
C. increasing P.D of electrodes
D. none of these

Q.54 **The wavelength of x-ray is measured by__**

A. diffraction
B. interference
C. reflection
D. all of these

Q.55 **Which rays are lasers?**

A. x-rays
B. beta rays
C. gamma rays
D. coherent photons

Q.56 **x-rays are produced in _____ tube**

A. Ar filled
B. He filled
C. H filled
D. Vacuum

ANSWER KEY

1	A	21	D	41	A
2	B	22	A	42	B
3	A	23	D	43	C
4	D	24	D	44	A
5	D	25	C	45	B
6	A	26	B	46	C
7	B	27	C	47	D
8	B	28	C	48	A
9	B	29	B	49	A
10	D	30	D	50	C
11	D	31	B	51	B
12	A	32	A	52	A
13	A	33	A	53	C
14	A	34	C	54	A
15	B	35	A	55	D
16	B	36	D	56	D
17	A	37	A		
18	D	38	B		
19	D	39	B		
20	C	40	C		

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13 TOPIC NUCLEAR PHYSICS

PRACTICE EXERCISE

Q.1 Value of UP Quark is
A. +2/3 B. -2/3
C. 1/3 D. -1/3

Q.2 Particles that have less mass than protons
A. Mesons B. Baryons
C. Photon D. Meons

Q.3 Biological weapon used is?
A. radiations B. chemicals
C. virus D. All

Q.4 Treatment of cancer cannot produce _____rays
A. α B. β
C. γ D. cosmics

Q.5 Number of Down Quark in Proton
A. 1 B. 2
C. 3 D. 4

Q.6 Number of Quarks in hydrogen atom
A. 1 B. 2
C. 3 D. 4

Q.7 Which of following has high mass
A. α B. β
C. γ D. Neutron

Q.8 Proton Down Quark value
A. -1/3 B. +2/3
C. -2/3 D. None

Q.9 Proton Up Quark Value
A. +2/3 B. -1/3
C. -2/3 D. None

Q.10 Which radiations more ionization
A. Alpha B. beta
C. gamma D. None

Q.11 Which one have more mass
A. Proton B. Alpha
C. Neutron D. Gamma

Q.12 How many Type of Quarks are there
A. 2 B. 6
C. 8 D. 10

Q.13 A nucleus consists of
A. Protons B. Neutrons
C. Electrons and protons D. Proton and neutron

Q.14 Spin of photon
A. 1 B. 1/2
C. 1/3 D. 1/4

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Q.15 Nucleus doesn't contain
A. Neutron
B. Free Electron
C. Proton
D. None

Q.16 High speed beta rays are
A. Electron
B. Positron
C. Electron and positron
D. Proton

Q.17 Photons have mass ____ than proton
A. Greater
B. Less
C. Equal
D. Zero mass

Q.18 Who discover neutron:
A. JJ Thomson
B. Chadwick
C. Maxwell
D. maxplanks

Q.19 Radius ratio has units
A. nano meter
B. millimeter square
C. Unit less
D. Fermi

Q.20 The binding energy for nucleus A is 7.7 MeV and that for nucleus Bis 7.8 MeV. Which nucleus has larger mass?
A. A
B. B
C. More info required
D. None of these

Q.21 One AMU is equal to
A. 1.66×10^{-27}kg
B. 166×10^{-15}ng
C. 166×10^{-20}g
D. All of above

Q.22 Antimatter consists of
A. Antiproton
B. Antineutron
C. Positron
D. All of above

Q.23 Neutron and proton are commonly known as
A. Nucleon
B. Meson
C. Boson
D. Quartz

Q.24 Which of the following radiations are suitable for the treatment of an infection in the interior of the body?
A. α-rays
B. β-rays
C. γ-rays
D. X-rays

Q.25 Various types of cancer are treated by
A. Cobalt-60
B. Strontium-90
C. Carbon-14
D. Nickel-63

Q.26 The charge on alpha particles is
A. Plus one
B. Plus two
C. Minus two
D. Minus one

Q.27 Alpha particle ionizes an atom
A. Through direct collision
B. Through electrostatic attraction
C. Through electrostatic repulsion
D. All of above

Q.28 T.V sets and microwave ovens emit
A. X-rays
B. α-rays
C. β-rays
D. γ-rays

Q.29 An alpha particle in a single encounter
A. Loses a small fraction of its energy
B. Losses most of its energy
C. Loses no energy at all
D. Loses all of its energy

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Q.30 X-rays are electromagnetic waves like
A. Light waves
B. Heat waves
C. Microwaves
D. γ-rays

Q.31 The charge on beta particle is
A. 1
B. -1
C. +2
D. -2

Q.32 The age of fossil when C-14: C-12 in bone is one fourth of ratio in bone of living animal and half-life of C-14 is 5732 years is
A. 100 years
B. 11460 years
C. 1000 years
D. 1200 years

Q.33 The matter is built from small particles called
A. radiant
B. atoms
C. isotopes
D. ions

Q.34 The lifetime of unstable nuclei is
A. limited
B. unlimited
C. 100 years
D. 50 years

Q.35 If the half-life of the radioactive element is $T_{1/2}$ then at the end of this time the number of atoms in the sample will become
A. one quarter
B. double
C. half
D. triple

Q.36 The word atom is derived from the Greek word
A. antimum
B. atomis
C. otomos
D. optium

Q.37 What is the half-time of a radioactive sample (in minutes), if its mean life is 200 s?
A. 0.69 min
B. 2 min
C. 2.57 min
D. 2.31 min

Q.38 Nucleus of an atom whose atomic mass is 24 consists of
A. 11 electrons, 11 protons and 13 neutrons
B. 11 electrons, 13 protons and 11 neutrons
C. 11 protons and 13 neutrons
D. 11 protons and 13 electrons

Q.39 A nuclei having same number of neutron but different number of protons / atomic number are called
A. isobars
B. isomers
C. isotones
D. isotopes

Q.40 Nuclear forces exists between
A. neutron – neutron
B. proton – proton
C. neutron – proton
D. all of these

Q.41 The antiparticle of electron is
A. positron
B. α-particle
C. proton
D. β-particle

Q.42 Radioactivity is
A. irreversible process
B. self disintegration process
C. spontaneous
D. all of the above

Q.43 Given the following properties of the up and down quarks and of the proton, what combination of quarks makes up a proton?

A. uuu
B. uud
C. udd
D. ddd

Q.44 What is the exchange particle for the electromagnetic interaction?

A. positron
B. electron
C. muon
D. photon

Q.45 The neutrino interacts with the world primarily through the .... force.

A. strong
B. electromagnetic
C. weak
D. gravitational

Q.46 The mass of a positron is

A. the same as that of an electron.
B. the negative of that of an electron.
C. zero.
D. about the same as that of a neutron.

Q.47 The large scale destruction, that would be caused due to the use of nuclear weapons is called

A. Nuclear holocaust
B. Thermo-nuclear reaction
C. Neutrons reproduction factor
D. None of these

Q.48 Sample of radioactive element with initial mass of 24 gm decayed to 3 gm in 36 minutes. How much of original sample remained after the first 12 minutes?

A. 12 g
B. 6 g
C. 2 g
D. 8 g

Q.49 C^{14} decays with a half-life of about 5800 years. In a sample of bone, the ratio of C^{14} to C^{14} is found to be 1/4th of what it is in free air. This bone may belong to a period about X centuries ago, where X is nearest to:

A. 2×5800
B. 5800
C. 5800/2
D. 3×5800

Q.50 Which is not radioactive?

A. ozone
B. hydrogen
C. sodium
D. all of these

Q.51 Protons and neutrons are composed of smaller particles called

A. Quarks
B. baryons
C. bosons
D. photons

Q.52 A nucleus emits an α- particle, followed by two β- particles. The final nucleus will be:

A. an isotone of the original one
B. an isotope of the original one.
C. an isobar of the original one.
D. none of these

Q.53 C14 has half-life 5700 years. At the end of 11400 years, the actual amount left is

A. 0.0625 of original amount
B. 0.5 of original amount
C. 0.25 of original amount
D. 0.125 of original amount

Q.54 A radioactive decay rate of 3.7×10^{10} disintegrations per second defines the unit of measurement known as the

A. Curie
B. Rutherford
C. Rontgen
D. Rad

Q.55 Absorbed dose D is defined as energy absorbed from ionization radiation per unit _____

A. mass
B. charge
C. time
D. area

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Q.56 If 238U decay two gamma particles the new atomic number will be
A. 238U
B. 234U
C. 237U
D. none of these

Q.57 Isotopes of an element have a different number of
A. proton
B. neutron
C. electron
D. atom

Q.58 The fusion reaction is almost ____ times stronger than fission reaction
A. two times
B. ten times
C. hundred times
D. thousand times

Q.59 Two spherical nuclei have mass number 216 and 64 with radius R1 and R2 respectively. The ratio of R2/R1 is
A. 1.5
B. 2
C. 2.5
D. 3

Q.60 Radiotherapy used in treatment of cancer usually use gamma-rays from
A. copper-60
B. cobalt-60
C. gold
D. silver

Q.61 1 Curie is equal to
A. 1 MBq
B. 37 MBq
C. 37 GBq
D. 3.7 GBqc

Q.62 _____ are such nuclei of an element that have the same mass number A, but have different charge number Z
A. isotopes
B. isobars
C. isomers
D. isotherms

Q.63 The radioactive isotope of Carbon is
A. 12C
B. 14C
C. 10C
D. none of these

Q.64 The Na atom cannot produce x-rays because
A. inner shell transition is possible
B. inner shell transition is not possible
C. it is non-radioactive
D. none of these

Q.65 One isotope of Uranium is U-238. Any other isotope of Uranium must have
A. 146 protons
B. 92 protons
C. 92 neutrons
D. 146 neutrons

Q.66 What will be the means life of a source whose half-life is 1 hour?
A. 0.693 hour
B. 1 hour
C. 1.9 hour
D. 1.443 hour

Q.67 The radioactive element when decay to first half-life the new element is called:
A. daughter element
B. modified element
C. radioactive element
D. all of these

Q.68 Which reaction is endothermic:
A. fission
B. fusion
C. formation of gas
D. none of these

Q.69 How many quarks in electron:
A. 0
B. 1
C. 2
D. 3

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Q.70 **Radon-222 has 136 neutrons, how many neutrons are there in Radon-220:**
A. 131
B. 134
C. 136
D. none of these

Q.71 **In fusion reaction of sun which element isotopes are used**
A. 0
B. C
C. U
D. H

Q.72 **If a photon is absorbed by a electron the energy of electron**
A. increase
B. decrease
C. remains same
D. another photon will be released by electron

Q.73 **What is the atomic number and mass number of Helium?**
A. A=4, Z=2
B. A=2 Z=4
C. A=1 Z=1
D. A=3, Z=1

Q.74 **What will be the decay constant of a material whose half-life is 1600 years in (year)^-1?**
A. 4.33×10^{-4}
B. 2.33×10^{-4}
C. 4.33×10^{4}
D. 2.33×10^{4}

Q.75 **The charge and mass of photon is**
A. 0,0
B. 1+,0
C. 1-,0
D. 1,1

Q.76 **The deuterium atom has _____ quarks**
A. 3
B. 6
C. 9
D. 12

Q.77 **Iodine-131 is used to trace which cancer**
A. lungs
B. thyroid gland
C. breast
D. liver

Q.78 **The source of gamma radiation is**
A. outside nucleus
B. inside nucleus
C. electron transition
D. none of these

Q.79 **The isotope of 235U92 has _____ number of neutrons**
A. 141
B. 142
C. 143
D. 144

Q.80 **Numbers of neutrons present in a nucleus is given by**
A. N= A+Z
B. N=AZ
C. N=A-Z
D. N=Z-A

Q.81 **What will happen in a time of 7 hours, if a radioactive substance has an average life of 7 hours?**
A. Half of the active nuclei decay
B. Less half of the active nuclei decay
C. More than half of the active nuclei decay
D. All active nuclei decay

Q.82 **The unstable atom means**
A. electrons are increasing
B. protons are increasing
C. neutrons are increasing
D. None of these

Q.83 **Which of the following is the same for isotopes?**
A. neutrons
B. protons
C. electrons
D. all of them

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Q.84 Which one of the following statements is correct

A. the mass of the nucleus must be less than the sum of the masses of the constituent neutrons and protons.

B. the mass of the nucleus must be equal to the sum of the masses of the constituent neutrons and protons.

C. the mass of the nucleus must be greater than the sum of the masses of the constituent neutrons and protons.

D. the mass of the nucleus must be greater than the sum of the masses of the constituent neutrons and protons.

Q.85 How many down quarks in Neutron?

A. 1 B. 2

C. 3 D. 4

Q.86 Which isotope has highest momentum when moving with same velocity

A. Protium B. deuterium

C. tritium D. all of these have same momentum

Q.87 What will be the decay constant of substance whose half-life is 1 hour? Give your answer in (hour^{-1}).

A. 0.693 B. 2494.8

C. 2294.8 D. 41.58

Q.88 Half-life of a radiation active element is that period in which half of the atoms:

A. diffuses B. decomposes

C. disturbed D. decay

Q.89 The fission reaction is slow reaction:

A. TRUE B. FALSE

C. true when neutrons slows down D. any of these

Q.90 What is the unit of decay constant?

A. Second B. Minute

C. Hour D. sec^{-1}

Q.91 Half-life of radioactive element means

A. Full life decays B. Quarter life decay

C. Half of decay D. All of These

Q.92 The artifacts and fossils are used to estimate ages by measured _____ content

A. Mineral B. Chemical

C. Radioactive D. All of these

Q 93 The half-life of a radioactive substance is 40 years. How long will it take to reduce to one fourth of its original amount and what is the value of decay constant?

A. 40 year, 0.9173/year B. 80-year, 0.0173 year

C. 90 year, 9.017/year D. none of these

Q.94 Whenever new nuclei are formed energy is

A. absorbed B. released

C. remains unchanged D. none of these

Q.95 SI unit of equivalent dose is

A. gray B. radiation

C. Sievert D. rem

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Q.96 If the nuclear radius of Al-27 is 3.6 fm, the approximate nuclear radius of Cu-64 in fermi is

A. 1.2 gm
B. 2.4 fm
C. 3.6 fm
D. 4.8 fm

Q.97 Centrifuge is used to purify

A. U
B. H
C. O
D. N

Q.98 The radiations all around us are called_____ radiations

A. natural
B. artificial
C. background radiations
D. no radiation is around us

Q.99 1 barn is a unit of area having the magnitude of:

A. 10^{24} cm ^{2}
B. 10^{-28}m ^{2}
C. 10^{-24}cm ^{2}
D. none of these

Q.100 To start a fusion reaction, energy required is:

A. small
B. large
C. infinite
D. zero

Q.101 The number of protons in the nucleus is called _____ number.

A. atomic
B. charge
C. atomic or charge
D. neither atomic nor charge

Q.102 The process by which a heavy nucleus splits up into lighter nuclei is known as

A. fission
B. fusion
C. alpha-decay
D. a chain reaction

Q.103 Ozone reflects ____ radiation from sun back into space

A. IR
B. UV
C. alpha
D. all of these

Q.104 Which water is used to reduce the speed of fast moving neutrons

A. Salty water
B. Pure water
C. heavy water
D. muddy water

Q.105 When deuterium and tritium fuse together they form

A. O atom
B. U atom
C. N atom
D. He atom

Q.106 The reason that white light is not harmful radiation is that:

A. its speed is less than other radiations
B. it is composed of different lights
C. it is originated from non radioactive element
D. none of these

Q.107 The radius R of a nucleus is given by:

A. $R=r_0A^{-1/3}$
B. $R= r_0\ A^{1/3}$
C. $R= r_0 A^3$
D. none of these

Q.108 _____ time is required for all the atoms to decay.

A. finite
B. infinite
C. very short
D. zero

Q.109 The quarks are fundamental particles:

A. true in some cases
B. only spin up quarks
C. only spin down quarks
D. False

Q.110 The ionization power of ____ ray is highest.

A. beta
B. gama
C. He-Ne laser
D. none of these

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Q.111 β- decay means emission of electron from:
A. radioactive nucleus
B. innermost electron orbit
C. a stable nucleus
D. outer mot electron orbit

Q.112 The effect of nuclear bomb radiation lasts for
A. few minutes
B. few weeks
C. few days
D. more than 90 Years

Q.113 Mean life of a radioactive element is 1 year. Then its half life (in years) is.....
A. 0.8
B. 1
C. 0.693
D. 0.5

Q.114 In nuclear fission, 0.1% of mass is converted into energy. The energy released by the fission of 1 kg mass will be.....J
A. $9x10^{19}$
B. $9x10^{17}$
C. $9x10^{16}$
D. $9x10^{13}$

Q.115 In gold foil experiment incident radiation on gold nuclei were scattered by:
A. neutrons
B. electrons
C. nucleus
D. neutrons

Q.116 The nucleus shape is considered to be:
A. square
B. rectangle
C. sphere
D. circular

Q.117 If a photon is absorbed by a nucleus the energy of nucleus:
A. remain same
B. increase slightly
C. decrease slightly
D. it will pass the nucleus

Q.118 The radioactive waste is used as:
A. fuel
B. nuclear medicine
C. crops fertilization
D. none of these

Q.119 The atomic mass unit is unit of:
A. distance
B. mass
C. time
D. none of these

Q.120 Half life of Au-198 is 2.7 days. What will be the average life?
A. 1.9 days
B. 3.9 days
C. 2.9 days
D. 4.9 days

Q.121 The control rods in nuclear reactor controls the reaction by:
A. reducing the number of neutron
B. increasing the neutrons speed
C. increasing the electron speed
D. decreasing the electron speed

Q.122 Uranium-238 forms thorium-234 after radioactive decay and has a half-life of 4.5 x 10^9 years. How many years will it take to decay 75% of the initial amount?
A. $9x10^9$ years
B. $4x10^9$ years
C. 9×10^{10} years
D. 4×10^{10} years

Q.123 The spin of quarks is
A. 1
B. 2
C. half
D. quarter

Q.124 An element X with Z 6 and A 14 has how many neutrons
A. 6
B. 8
C. 14
D. 20

Q.125 The H atom has _____ quarks
A. 1
B. 2
C. 3
D. 4

Q.126 What will be the product after alpha decay of U- 238?
A. Th-234
B. Po-234
C. Rn-234
D. none of these

Q.127 In fission reactions when nucleus breaks heat energy is:
A. released
B. absorbed
C. reflected
D. any of these

Q.128 The cosmic radiations are _____ energetic than gamma rays
A. highly
B. equally
C. less
D. none of these

Q.129 A sample of radioactive element has a mass of 10 gm at an instant t = 0. The approximate mass of this element in the sample after two mean lives is
A. 3.70 gm
B. 6.30 gm
C. 2.50 gm
D. 1.35 gm

Q.130 Which element has three isotopes?
A. H
B. O
C. Cl
D. none of these

Q.131 Radioactive radiations are used to destroy
A. healthy cells
B. cancerous cells
C. bacteria
D. damaged organs

Q.132 The Ozone is a isotope of
A. O
B. H
C. Cl
D. none of these

Q.133 The core of earth is hot due to
A. fission reactions
B. fusion reactions
C. frictional forces
D. all of these

Q.134 A radioactive source has a half-life of 80 s. How long it will take to decay 7/8 of the source?
A. 10 sec
B. 70 sec
C. 240 sec
D. 640 sec

Q.135 Half-life is measured by
A. spectroscopic method
B. Geiger muller counter
C. carbon dating
D. all of these

Q.136 As mass number increases, which of the following does not change
A. mass
B. density
C. volume
D. binding energy

Q.137 The half-life of radium is about 1600 years. Of 100 g of radium existing now, 25 g will remain unchanged after
A. 2400 years
B. 3200 years
C. 6400 years
D. 4800 years

Q.138 A nucleus with A=235 splits into two nuclei of mass numbers in the ratio 1:2. The ratio of the radii of the new nuclei are:
A. 1:02
B. 01:01.3
C. 8:01
D. none of these

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Q.139 The charge on gamma rays is
A. 1+
B. 1-
C. 0
D. none of these

Q.140 X rays are also known as
A. slow moving invisible photons
B. slow moving visible photons
C. fast moving invisible photons
D. fast moving visible photons

Q.141 Number of atoms decaying in a particular period is _____ to number of atoms present in the beginning of the period
A. directly proportional
B. inversely proportional
C. equal
D. independent

Q.142 A radioactive element emits 200 particles per second. After three hours 25 particles per second are emitted. The half life period of element will be
A. 80 minutes
B. 70 minutes
C. 60 minutes
D. 50 minutes

Q.143 How many curies are there in 10^10 Bq?
A. 0.17 Ci
B. 0.37 Ci
C. 2.7 Ci
D. 0.7 Ci

Q.144 The H atom cannot produce
A. alpha rays
B. beta rays
C. x-rays
D. none of these

Q.145 The phenomenon of radioactivity is
A. Nuclear process does not depend on external factors
B. increased on applied pressure
C. exothermic change which increase and decrease with temperature
D. none of these

Q.146 Three types of radioactive elements are emitted when unstable nuclei undergo radioactive decay. Which of the following is not one of them?
A. alpha
B. beta
C. gamma
D. delta

Q.147 If crops are grown under greenhouse radiation the crops will
A. grow faster
B. grow slowly
C. burn immediately
D. none of these will happen

Q.148 The charge and mass of photon is
A. 0,0
B. 1+,0
C. 1-,0
D. 1,1

.149 C14 has half life 5700 years. At the end of 11400 years, the actual amount left is
A. 0.0625 of original amount
B. 0.5 of original amount
C. 0.25 of original amount
D. 0.125 of original amount

150 When the nucleus of an unstable atom emits only gamma radiation, the nucleus must
A. gain energy
B. lose energy
C. lose protons
D. gain protons

151 Average life in terms of decay constant is
A. $1/\lambda$
B. λ^2
C. 2λ
D. $\ln 2/\lambda$

Q.152 x-rays were discovered in
A. nuclear bomb experiment
B. chemical reaction experiment
C. scattering experiment
D. none of these

Q.153 Which of the following blocks will release heat fast?
A. rough white surface
B. polished white surface
C. rough black surface
D. polished black surface

Q.154 If two particles collide with one anti particle the resultant will give
A. one particle, one anti particle
B. total annihilation
C. one antiparticle only
D. none of these

Q.155 Bones image is shown on x-ray photograph because x-rays can be
A. transmitted through bones
B. reflected by bones
C. absorbed by bones
D. scattered by bones

Q.156 If 238U decay two gamma particles the new atomic number will be
A. 238U
B. 234U
C. 237U
D. None of these

Q.157 The nucleus is made up of more neutrons than protons
A. I
B. O
C. U
D. None of these

Q.158 The radius of atom is of the order of
A. 10^{10} m
B. 10^{-10}m
C. 10^{-14}m
D. 10^{14}m

Q.159 Atom is neutral because it has equal number of
A. Charge particles
B. Uncharged particles
C. Neutrons
D. All of these

Q.160 What will be the decay constant of 1 Curie sample of radioactive substance of mass 214, its half- life is 26.8 min?
A. 4.31×10^{-4}
B. 4.31×10^{-5}
C. 4.31×10^{5}
D. 0.431

Q.161 The radiotracers _____ the production of cancer cells
A. increase
B. decrease
C. fix
D. none of these

Q.162 SI unit of absorbed dose is
A. Gray
B. Roentgen
C. Curie
D. Rem

Q.163 If a person is irradiated accidently by high radiation what immediate effects would be seen?
A. Skin burning
B. High blood pressure
C. Fever
D. Any of these

Q.164 A radioactive sample with a half-life of 1 month has the label : "Activity=2 micro curies on 1.8.1991." What will be its activity two months later?
A. 0.5 micro curies
B. 8 micro curies
C. 1 micro curies
D. 2 micro curies

Q.165 Which radiation is used in greenhouse effect?
A. UV
B. IR
C. X-rays
D. Gamma-rays

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Q.166 The proton and antiproton collision will result
A. scattering
B. repulsion
C. attraction
D. annihilation

Q.167 The half-life of radioactive element is
A. 0.693λ
B. 0.693/λ
C. λ/0.693
D. 1/λ

Q.168 The number of neutrons emerged out in a single nucleus during fission reaction are
A. Infinite
B. Zero
C. 3
D. None of these

Q.169 If $^{238}Pu_{94}$ decay an alpha particle the new atomic number and mass number are
A. 234,90
B. 234,92
C. 231,97
D. None of these

Q.170 The charge on electron is equal to
A. Proton
B. Two protons
C. Two neutrons
D. None of these

Q.171 For skin cancer _____ is used
A. Phosphorus-32
B. Strontium-90
C. Both
D. None of these

Q.172 Half-life of radioactive nuclide is 20 hours. What fraction of original activity will remain after 40 hours?
A. ½
B. 2
C. 4
D. 1/4

Q.173 The forces of friction causes
A. excitations
B. de-excitations
C. magnetization
D. none of these

Q.174 What is the fraction of atom left after 10 half-life of a substance?
A. 1/512
B. 1/1024
C. 1/256
D. 1/2048

Q.175 In microwave ovens ____ is used to heat the food
A. x-rays
B. beta rays
C. gamma rays
D. electromagnetic rays

Q.176 The charge on gamma rays is
A. 1+
B. 1-
C. 0
D. none of these

Q.177 _____ are such nuclei of an element that have the same mass number A, but have different charge number Z
A. isotopes
B. isobars
C. isomers
D. isotherms

Q.178 Nuclear force is:
A. spin independent
B. both charge and spin independent
C. spin dependent but charge independent
D. charge dependent

Q.179 The anti-particle of quark is_____
A. electrons
B. protons
C. neutrons
D. none of these

Q.180 The half-life of a radioactive substance is 5 min. The amount of substance decayed in 20min will be

A. 93.75 %
B. 6.25 %
C. 25 %
D. 75 %

Q.181 Which rays are used to scan bones?

A. white rays
B. beta rays
C. gamma rays
D. none of these

Q.182 Which of the following substances cannot be emitted by radioactive substances during their decay?

A. protons
B. neutrinos
C. helium nuclei
D. electrons

Q.183 How many milligrams of tritium will remain after 49.2 years if the starting amount is 32 mg? The half-life of tritium is 12.3 years

A. 8mg
B. 2mg
C. 1mg
D. 4mg

Q.184 T_1 and T_2 are the half lives of two radioactive elements of decay constant λ_1 and λ_2 respectively then the value of T_1/T_2 is:

A. $\lambda_2 = \lambda_1$
B. $\lambda_{-1}\lambda_2$
C. λ_1/λ_2
D. λ_2/λ_1

Q.185 The process by which a heavy nucleus splits up into lighter nuclei is known as

A. fission
B. fusion
C. alpha-decay
D. a chain reaction

Q.186 1 rutherford is equal to

A. 10^4 Bq
B. 10^6 Bq
C. 10^7 Bq
D. 10^5 Bq

Q.187 _____ is often used to cure skin cancer

A. cobalt-60
B. radon gas
C. iodine-131
D. strontium-90

Q.188 The atomic mass unit is unit of

A. distance
B. mass
C. time
D. none of these

Q.189 Radon-222 has 136 neutrons, how many neutrons are there in Radon-220

A. 131
B. 134
C. 136
D. none of these

Q.190 After certain lapse of time, the fraction of radioactive polonium is found to be 12.5% of initial quantity. If the half-life of polonium is 138 days, then duration of time lapse is _____ days.

A. 34.5
B. 276
C. 414
D. 125

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ANSWER KEY

1	D	21	A	41	A	61	C	81	C	101	C	121	A	141	A	161	B	181	D
2	D	22	D	42	D	62	B	82	D	102	A	122	A	142	C	162	A	182	A
3	C	23	A	43	B	63	B	83	B	103	B	123	C	143	C	163	D	183	B
4	D	24	C	44	D	64	D	84	A	104	C	124	B	144	D	164	B	184	D
5	A	25	A	45	C	65	B	85	B	105	D	125	C	145	A	165	B	185	A
6	C	26	B	46	A	66	D	86	C	106	A	126	A	146	D	166	D	186	B
7	A	27	A	47	A	67	A	87	A	107	B	127	A	147	A	167	B	187	D
8	A	28	A	48	A	68	C	88	D	108	B	128	A	148	A	168	C	188	B
9	A	29	B	49	A	69	A	89	C	109	A	129	D	149	C	169	B	189	C
10	A	30	D	50	D	70	B	90	D	110	A	130	A	150	B	170	A	190	C
11	B	31	B	51	A	71	D	91	C	111	A	131	B	151	A	171	C		
12	B	32	B	52	B	72	A	92	C	112	D	132	D	152	C	172	D		
13	D	33	B	53	C	73	A	93	B	113	C	133	B	153	C	173	A		
14	A	34	B	54	A	74	A	94	B	114	D	134	C	154	D	174	B		
15	B	35	C	55	A	75	A	95	C	115	C	135	C	155	C	175	D		
16	A	36	C	56	A	76	B	96	D	116	C	136	B	156	A	176	D		
17	B	37	D	57	B	77	B	97	A	117	B	137	B	157	C	177	B		
18	B	38	C	58	D	78	B	98	C	118	D	138	D	158	B	178	C		
19	C	39	C	59	A	79	C	99	C	119	B	139	C	159	A	179	D		
20	A	40	D	60	B	80	C	100	B	120	B	140	C	160	A	180	A		

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1 TOPIC TENSES

PRACTICE EXERCISE

Q.1 I_____ English since my childhood.
A. study
B. am studying
C. have been studying
D. studied

Q.2 Which verb is NOT in the present tense?
A. she listened
B. she talks
C. She waits
D. She eats

Q.3 My parents _____ near Lahore.
A. living
B. are living
C. lives
D. live

Q.4 They will bake the pies. Which tense is used here?
A. Present
B. Past
C. Future
D. Universal truth

Q.5 I _____him for a long time.
A. know
B. have known
C. am knowing
D. knew

Q.6 What is the tense of the question? Will Tom be able to mend that broken window?
A. Present
B. Past
C. Future
D. None of these

Q.7 Jack is six years old, but he _____ French and Spanish.
A. speaking
B. is speaking
C. speaks
D. speak

Q.8 We are trying to locate the historical city for the past two years.
A. B. C. D.
A. we were trying
B. to locate the
C. the historical city
D. the past two years

Q.9 She ran with quick steps to the house when it _____ (start)raining.
A. start
B. starting
C. started
D. was started

Q.10 She _____ for America tomorrow.
A. will leave
B. shall leave
C. left
D. leaving

Q.11 We _____ (visit) the lake many times before, but we enjoyed ourselves the most this time.
A. visit
B. have visited
C. visited
D. had visited

Q.12 What tense is the verb in this sentence? 'They go to college on Mondays.'
A. Present
B. Past
C. Future
D. None of these

Q.13 Choose the correct sentence.
A. I did not accompanied them.
B. I do not accompanied them.
C. I does not accompany them.
D. I did not accompany them.

Dan _____ a lot of friends.
A. have
B. has
C. is having
D. having

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Q.15 We shall _____ there for a week.
A. be going
B. has been gone
C. has going
D. been going

Q.16 We have been knowing each other since we were children.
A. B. C. D.
A. We have
B. been knowing
C. each other
D. since we were children

Q.17 I am in London this Summer. I _____ English,
A. learn
B. learns
C. am learning
D. learning

Q.18 Everyone who was injured in the accident were taken to the hospital.
A. B. C. D.
A. Everyone who was injured
B. in the accident
C. were taken
D. to the hospital

Q.19 _____ anyone _____ a pencil I could borrow?
A. do, have
B. Does., have
C. do, has
D. Does- has

Q.20 Most of the milk _____ gone bad. Six gallons of milk ____ still in the refrigerator
A. has… are
B. have… is
C. has… is
D. have... are

Q.21 What tense is the verb in this sentence? 'I'll take you in my car.'
A. Present
B. Past
C. Future
D. none of these

Q.22 Which one is correct?
A. Had she clean her home?
B. Is that she cleaned her home?
C. Did she clean her home?
D. Has she cleaned her home?

Q.23 My father _____ in 1956.
A. died
B. dies
C. had die
D. has died

Q.24 Last Saturday, my father _____ (take) my friends and me to the circus.
A. take
B. took
C. will take
D. has taken

Q.25 By the next month, we shall _____ (have) the project.
A. have
B. have had
C. has
D. having

Q.26 The peon _____ the bell yet.
A. has rings
B. had rung
C. has not rung
D. ring

Q.27 Identify the tense used in the sentence. "Everyone shall be reaching by tomorrow"
A. Present
B. Past
C. Future
D. None

Q.28 It ____ (rain) since last night.
A. raining
B. has been raining
C. rains
D. rained

Q.29 Choose the correct type of tense, "We will visit the museum"
A. Present
B. Past
C. Future
D. None

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Q.30 "What are you doing here?" "I _____ TV."
A. watching
B. am watching
C. is watching
D. watches

Q.31 Past tense out of these
A. She eats apple.
B. She went to market
C. She will go the park.
D. She is eating vegetables.

Q.32 Choose the future tense
A. It's raining
B. I have done my work
C. We will play together
D. He didn't like you

Q.33 Identify the future sentence:
A. I go to school.
B. I shall go to school.
C. I went to school.
D. I have gone to school.

Q.34 I will go tomorrow.
A. Present tense
B. Future tense
C. Past tense
D. None of these

Q.35 Choose the correct tense
A. He will passed in exam
B. He shall passed in exam
C. He will pass in exam
D. He have been pass exam

Q.36 Choose the correct future tense
A. He will play basketball.
B. He is playing basketball.
C. He was play basketball.
D. He were play basketball.

Q.37 Which is not past _____
A. He had gone to school
B. He is going to school
C. He went to school
D. He had been going to school

Q.38 "We were good friends" tense is?
A. Past
B. Present
C. Future
D. Interrogative

ANSWER KEY

1	C	11	D	21	C	31	B
2	A	12	A	22	D	32	C
3	D	13	D	23	A	33	B
4	C	14	B	24	B	34	B
5	B	15	A	25	B	35	C
6	C	16	B	26	C	36	A
7	C	17	C	27	C	37	B
8	A	18	C	28	B	38	A
9	C	19	D	29	C		
10	A	20	A	30	B		

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2 TOPIC VERB

PRACTICE EXERCISE

Q.1 They have _____ very close friends until they quarreled over petty issue.

A. they have been
B. very close friends
C. until they quarreled
D. over a petty issue.

Q.2 Some of the books on the table _____ to me.

A. belong
B. belonging
C. belongs
D. was belong

Q.3 Have you _____ the examination?

A. take
B. took
C. taken
D. taking

Q.4 Mrs. Rose _____ to do a course in Biology next week.

A. are planning
B. plans
C. with a plan
D. planning

Q.5 Sameer _____ in the park every day.

A. run
B. runs
C. running
D. will run

Q.6 Sumaira was surprised when her boss didn't _____ the dinner they had at the restaurant.

A. buy
B. pay
C. pay for
D. spend

Q.7 If I had been thirsty, I would have drank the lemonade without waiting for you.

A. If I had been thirsty
B. I would have
C. Drank the lemonade
D. without waiting for you.

Q.8 My brother and sister _____ basketball every evening.

A. practises
B. practise
C. practising
D. are practising

Q.9 Father must ____ left his briefcase at the office.

A. of
B. had
C. have
D. opt

Q.10 My friend _____ (suffer) from cholera since August.

A. suffer
B. suffered
C. suffering
D. is suffering

Q.11 I ____ (write)a new book. I _____ (hope) to finish it by the end of this month.

A. write, hoping
B. am writing, hope
C. wrote, am hopeful
D. writing, hope

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Q.12 While climbing onto the mountain top, I_____ (encounter) a strange animal which I'd never seen before.

A. encounter
B. encountered
C. will encounter
D. encountering

Q.13 Either of the two dresses shall _____ good.

A. looking
B. look
C. looks
D. looked

Q.14 The old man _____ (yell) at the boys who teased him.

A. yell
B. yelled
C. yelling
D. yells

Q.15 The plane _____ late because one of the passengers was sick.

A. grew up
B. blew up
C. went off
D. took off

Q.16 Choose the correct sentence.

A. He visit the temple frequently.
B. He visits the temple frequently.
C. He had visiting the temple frequently.
D. He have had visited the temple frequently.

Q.17 We _____ (laugh) at the funny clowns.

A. laugh
B. laughs
C. laughing
D. laughed

Q.18 It _____ a lot of money.

A. costs
B. cost
C. costed
D. is costing

Q.19 The Gardner will have _____ the flowers.

A. plucked
B. pluck
C. plucks
D. none

Q.20 Everyone _____ done his or her homework.

A. has
B. have
C. were
D. none

Q.21 The robber broke into the house and _____ with the lone occupant ropes.

A. tied
B. ties
C. tie
D. tying

Q.22 I found this bangle while digging in the backyard. I don't know who it belonged to.

A. I found this
B. while
C. in the backyard
D. I don't know who it belonged to

Q.23 Which brand do you _____, Honda or Toyota?

A. rather
B. eaat
C. prefer
D. wear

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PMC Topic-2

Q.24 When I was young, I _____ (use) play cricket a lot.

A. use
B. used
C. used to
D. use to

Q.25 We _____ (eat) the popcorn and _____ (drink) the orange juice.

A. eat, drink
B. ate, drink
C. eat, drank
D. ate, drank

Q.26 You must had (A) a kind and gentle heart (B) if you want (C) / to become a successful doctor (D)

A. You must had
B. a kind and gentle heart
C. if you want
D. to become a successful doctor.

Q.27 Sam _____ in the garden now.

A. dig
B. digging
C. will dig
D. is digging

Q.28 Sara _____ (unlock) the door and _____ into her apartment

A. unlocking … going
B. unlocked … go
C. unlocked … gone
D. unlocks … is going

Q.29 The sun _____ (shine) brightly.

A. shines
B. shined
C. shone
D. shining

Q.30 <u>Now the time was</u> <u>to escape</u> and <u>he opened the window</u> and <u>jumped out.</u>

A. B. C. D.

A. Now the time was
B. to escape
C. he opened the window
D. jumped out

Q.31 I advised her ____ drink it.

A. don't
B. not to
C. to not
D. to don't

Q.32 The board of directors _____ anxious.

A. has been
B. have been
C. were
D. was

Q.33 I love you. I can't _____ the thought of losing you.

A. forget
B. bare
C. bear
D. think

Q.34 She _____ cooking in leisure time.

A. enjoys
B. enjoyed
C. enjoy
D. enjoying

Q.35 He often left when my father _____.

A. came
B. come
C. coming
D. comes

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Q.36 When I was young, I __ (use) play cricket

A. Use
B. Used
C. Used to
D. None

Q.37 Neither John nor Joddy _____ playing

A. are playing
B. is playing
C. None
D.

Q.38 He _____ to school in time.

A. goes
B. gone
C. has gone
D. going

Q.39 Dan ____ a lot of money.

A. has
B. have
C. is having
D. having

Q.40 Last night, I _____ to movies with my friends.

A. went
B. gone
C. going
D. go

Q.41 Don't leave I am going to _____ tea for you.

A. make
B. making
C. made
D. none of these

Q.42 Only Mr. Seward's name and telephone number _____ printed on the card.

A. has
B. had
C. were
D. was

Q.43 She went to the market to __ the new car for her daughter.

A. buy
B. by
C. bay
D. bey

Q.44 Choose the correct option.

A. I would rather he did not listen to Abul.
B. I would not rather he listened to Abul
C. I would rather him listened to Abul
D. I would rather he not listen to Abul.

ANSWER KEY

1	A	11	B	21	A	31	B	41	A
2	A	12	B	22	B	32	C	42	D
3	C	13	B	23	C	33	C	43	A
4	B	14	B	24	C	34	A	44	A
5	B	15	D	25	A	35	D		
6	C	16	B	26	A	36	C		
7	C	17	A	27	D	37	B		
8	B	18	A	28	B	38	A		
9	C	19	A	29	A	39	A		
10	D	20	A	30	A	40	A		

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3 AGREEMENT MISTAKES

TOPIC » PRACTICE EXERCISE

Q.1 None of them _____ able to solve this question.
A. is
B. were
C. was
D. would be

Q.2 The ebb and flow of the tides _____ explained by Newton.
A. are
B. was
C. were
D. have

Q.3 The information provided to you _____ wrong.
A. were
B. was
C. are
D. have been

Q.4 Measles _____ a contagious childhood disease.
A. is
B. are
C. were
D. be

Q.5 John _____ to be a doctor.
A. wants
B. wanting
C. is wanting
D. have wanted

Q.6 Some of the people waiting in line _____ getting impatient.
A. is
B. was
C. are
D. be

Q.7 A large sum of money _____ stolen in last nights bank robbery.
A. is
B. are
C. was
D. were

Q.8 A large number of soldiers _____ died for the country.
A. has
B. is
C. are
D. have

Q.9 The children as well as their mother _____ missing after the floods.
A. is
B. are
C. was
D. were not

Q.10 Ninety rupees _____ too much for this bag.
A. is
B. are
C. be
D. were

Q.11 Annie and her brothers _____ at school.
A. is
B. are
C. are being
D. have

My father often _____ here.
A. come
B. Came
C. comes
D. Coming

The captain, along with his team, are practicing very hard for the forthcoming matches.
A. B. C. D.

A. The captain, along with his team
B. are practicing very hard
C. for the
D. forthcoming matches.

Physics _____ difficult to understand.
A. were
B. are
C. is
D. have been

Q.15 Either of the two dresses shall _____ good.
A. looking
B. look
C. looks
D. looked

Q.16 He is a scientist (A)/ but out of (B)/ his three sons (C)/ neither have become scientists. (D)
A. He is a scientist
B. but out of
C. his three sons
D. neither have become scientists.

Q.17 No, my family _____ live nearby.
A. docs not
B. do
C. do not
D. did

Q.18 There _____ many objections to the plan.
A. is
B. are
C. was
D. be

Q.19 Either my father or my brothers _____ going to sell the car.
A. is
B. are
C. were
D. was

Q.20 Each and every member _____ to vote.
A. has
B. have
C. having
D. are

Q.21 Politics _____ an interesting subject.
A. is
B. are
C. were
D. have

Q.22 Gymnastics _____ famous in the USA.
A. is
B. are
C. were
D. have

ANSWER KEY

1	C	11	B	21	A
2	B	12	C	22	A
3	B	13	B		
4	A	14	C		
5	A	15	B		
6	C	16	D		
7	A	17	A		
8	D	18	B		
9	B	19	B		
10	A	20	A		

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4 TOPIC COMBINATIO

PRACTICE EXERCISE

Q.1 Children usually _____ a noise.

A. made
B. makes
C. are making
D. make

Q.2 As an officer he not only was competent but also honest

A. B. C. D.

A. As an officer
B. he not only
C. was competent
D. also honest

ANSWER KEY

1	D
2	B

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5 TOPIC MODIFIER

PRACTICE EXERCISE

Q.1 **It is the duty of every citizen to do his utmost to defend the hardly won freedom of the country.**

A. **B.** **C.** **D.**

A. It is the duty of every citizen
B. to do his utmost
C. to defend the hardly won
D. freedom of the country.

Q.2 **_____ people know the town better than old Jake here.**

A. Only few
B. The few
C. Only the few
D. Few

ANSWER KEY

1	C
2	B

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6 TOPIC THE NOUN

PRACTICE EXERCISE

Q.1 Further research is needed to find out what side _____ this pill has on a person's digestive system.

A. affects

B. effects

C. defects

D. suspects

ANSWER KEY

1 B

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TOPIC 7 THE ARTICLE

PRACTICE EXERCISE

Q.1 There was _____ article about pollution in _____ paper.
A. a...an
B. an...the
C. a... the
D. a...a

Q.2 We have _____ small house in _____ village in _____ Netherlands.
A. the…an…a
B. an…a…the
C. a…a…the
D. a…an…the

Q.3 _____ ink in my pen is red.
A. a
B. an
C. the
D. no article

Q.4 Our neighbour have_____ cat and _____dog.
A. a... an
B. a…a
C. a....the
D. an...an

Q.5 Most big cities have _____ university.
A. a
B. an
C. the
D. no article

Q.6 _____ man is mortal.
A. A
B. An
C. The
D. No article

Q.7 Fetch _____ chair and sit down.
A. A
B. an
C. the
D. no article

Q.8 I like _____ blue T-shirt over there better than ____ red one.
A. a... a
B. a...an
C. the… a
D. the... the

Q.9 I think _____ man over there is very ill. He can't stand on his feet.
A. a
B. an
C. the
D. no article

Q.10 I lived on _____ main street when I first came to town.
A. a
B. an
C. the
D. no article

Q.11 Saad likes to play _____ hockey.
A. a
B. an
C. the
D. no article

Q.12 We will need _____ umbrella today.
A. a
B. an
C. the
D. no article

Q.13 Please give me _____ cake that is on the counter.
A. a
B. an
C. the
D. no article

Q.14 _____ camel is the ship of the desert.
A. A
B. An
C. The
D. No article

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Q.15 _____ icon like this is called _____ hourglass
A. an...a
B. an...the
C. an...an
D. the...an

Q.16 Bilal has _____ terrible headache.
A. a
B. an
C. the
D. no article

Q.17 Our neighbors have cat ____ and _____ dog.
A. a...an
B. a...a
C. a...the
D. an...an

Q.18 _____ camel is the ship of the desert.
A. A
B. An
C. The
D. No article

Q.19 I bought _____ new TV set yesterday.
A. a
B. an
C. the
D. no article

Q.20 What do you usually base for _____ breakfast?
A. a
B. an
C. the
D. no article

Q.21 One of the students said, "_____ professor is late today."
A. a
B. an
C. the
D. no article

Q.22 The book is about ____ man who lives on _____ small island.
A. a ... an
B. a ... a
C. a ... the
D. an ... an

Q.23 I borrowed _____ pencil from your pile of pencils and pens.
A. a
B. an
C. the
D. no article

Q.24 Marlam enjoys eating _____ Cheese.
A. a
B. an
C. the
D. no article

Q.25 Gold is _____ precious metal.
A. a
B. an
C. the
D. no article

ANSWER KEY

1	B	11	D	21	C
2	C	12	B	22	B
3	C	13	D	23	A
4	B	14	D	24	D
5	A	15	C	25	A
6	D	16	A		
7	A	17	B		
8	D	18	D		
9	C	19	A		
10	D	20	D		

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TOPIC 8 THE ADJECTIVE

PRACTICE EXERCISE

Q.1 Aslam and his friends were making too much noise. Their father got really ____ at them.

A. afraid
B. angry
C. kind
D. strong

Q.2 We are planning to get a big, _____ table for our dining-room.

A. rough
B. empty
C. deep
D. round

Q.3 I found the (A)/ two first chapters (B) /of the book (C)/ particularly interesting. (D)

A. I found the
B. two first chapters
C. of the book
D. particularly interesting.

Q.4

A. She has married a tall young Australian accountant.
B. She has married a young tall Australian accountant.
C. She has married a tall Australian young accountant.
D. She has married a young Australian tall accountant.

ANSWER KEY

1	B
2	D
3	B
4	A

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9 TOPIC THE PRONOUN

PRACTICE EXERCISE

Q.1 **_____ knows that Dallas is not the capital of Texas.**

A. Anyone

B. Many persons

C. Not everyone

D. Somebody

Q.2 **Which is correct?**

A. Who do you think you are to advice me about the dating?

B. Whom do you think you are to advice me about dating?

C. Both are correct

D. Both are in correct

Q.3 **"That" can stand over_____**

A. Noun

B. Pronoun

C. Adjective

D. Adverb

ANSWER KEY

1	C
2	C
3	B

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10 TOPIC THE ADVERB

PRACTICE EXERCISE

Q.1 **Choose the correct sentence.**

A. However, it didn't take long for others to jump on board.

B. However it didn't take long for others to jump on board.

C. However, it didn't take long for others to jump on board?

D. However, it didn't take long for others to jump on board.

Q.2 **A really sophisticated person would never be ____ enough to think that he is always eight.**

A. reverent

B. naive

C. articulate

D. humble

ANSWER KEY

1	D
2	B

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11 TOPIC THE PREPOSITION

PRACTICE EXERCISE

Q.1 **You will find more information in the _____**

A. attached to file
B. attached file
C. attachment file
D. file what is attached

Q.2 **My watch is five minutes _____.**

A. behind
B. before
C. slow
D. early

Q.3 **The train leaves _____ 5 o'clock, hurry up!**

A. at
B. in
C. around
D. under

Q.4 **We must go and congratulate him for his brilliant performance.**

A. B. C. D.

A. We must go
B. and congratulate him for
C. his brilliant
D. performance.

Q.5 **The dug sprang _____ him.**

A. on
B. upon
C. in
D. over

Q.6 **In most countries, children start primary school _____ the age of six.**

A. in
B. on
C. at
D. to

Q.7 **They had been waiting at the departure lounge for almost three hours when they finally got _____ the train.**

A. on
B. in
C. up
D. to

Q.8 **The students were awaiting for the arrival of the chief guest.**

A. B. C. D.

A. The students were
B. awaiting for
C. the arrival of
D. the chief guest.

Q.9 **We still haven't come ____ with an interesting theme for advertising campaign**

A. on
B. in
C. up
D. down

Q.10 **Interested**

A. in
B. on
C. at
D. of

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Q.11 I was talking ____ my friend.

A. to
B. for
C. on
D. of

Q.12 Ali is famous _____ kindness.

A. for
B. from
C. at
D. in

Q.13 He is suffering ____ fever.

A. from
B. at
C. with
D. for

Q.14 The wheels _____ the bus go round and round.

A. on
B. in
C. at
D. for

Q.15 Ali was sad ____ getting bad grades.

A. in
B. by
C. for
D. at

ANSWER KEY

1	B	11	A
2	C	12	A
3	A	13	A
4	B	14	A
5	B	15	D
6	C		
7	A		
8	B		
9	C		
10	A		

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12 TOPIC PUNCTUATION

PRACTICE EXERCISE

Q.1 Choose the correct sentence

A. Did you know that they're leaving the city for good.
B. Did you know that they're leaving the city for good?
C. Did you know that the'yre leaving the city for good?
D. Did you know that theyre leaving the city for good?

Q.2 Choose the correct sentence.

A. "Trust me, I know what I'm doing," Bilal said. "Your car is not hard to fix."
B. "Trust me, I know what I'm doing," Bilal said, "your car is not hard to fix."
C. "Trust me I know what I'm doing," Bilal said. "Your car is not hard to fix."
D. "Trust me, I know what I'm doing," Bilal said. Your car is not hard to fix.

Q.3 Choose the correct contraction of 'Should have'.

A. shouldh've
B. should've
C. shouldhv'e
D. should'ave

Q.4 Choose the correct sentence.

A. Huda watched the news on the BBC.
B. Huda watched the news on the BBC?
C. Huda, watched the news, on the BBC.
D. Huda watched the news on the bbc.

Q.5 Choose the correct sentence.

A. You're going to lose your slice of cake if you do not eat it quickly!
B. Your'e going to lose your slice of cake if you do not eat it quickly.
C. You're going to lose your slice of cake if you do not eat it quickly.
D. Youre going to lose your slice of cake if you do not eat it quickly.

Q.6 Choose the correct contraction of 'We are'.

A. we're
B. were
C. wer'e
D. were'

Q.7 Choose the correct sentence.

A. Mrs Sajjad: who was sitting behind the desk, gave me a big smile.
B. Mrs Sajjad who was sitting behind the desk gave me a big smile.
C. Mrs Sajjad, who was sitting behind the desk, gave me a big smile.
D. Mrs Sajjad, who was sitting behind the desk gave me a big smile?

Q.8 Choose the correct sentence.

A. The class will begin, next Tuesday 6th September; at 6 p.m.
B. The class will begin next Tuesday 6th September at 6 p.m.!
C. The class will begin next Tuesday, 6th September, at 6 p.m.
D. The class will begin next Tuesday, 6th September, at 6 p.m.

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Q.9 Choose the correct sentence.

A. Mother said "leave the dishes on the table until we have finished eating."
B. Mother said "Leave the dishes on the table until we have finished eating."
C. Mother said, "Leave the dishes on the table until we have finished eating."
D. Mother said, leave the dishes on the table until we have finished eating.

Q.10 Choose the correct contraction 'Who is'.

A. whos
B. whose
C. who's
D. whos'

Q.11 Choose the correct sentence.

A. I don't like this one bit said Jamil.
B. "I don't like tins one bit." said Jamil.
C. "I don't like this one bit?" said Jamil.
D. I don't like tins one bit, said Jamil.

Q.12 Choose the correct sentence.

A. After class, but before lunch. I went jogging
B. After class, but before lunch I went jogging
C. After class but before lunch. I went jogging.
D. After class, but before lunch, I went jogging'

Q.13 Choose the correct sentence.

A. Dr Hussain works al city hospital in gulberg.
B. Dr Hussain works at City Hospital in Gulberg?
C. Dr Hussain works at City Hospital in Gulberg
D. Dr Hussain works at city hospital in Gulberg.

Q.14 Choose the correct sentence.

A. i think june is the hottest month.
B. I think june is the hottest month.
C. I think June is the hotest month.
D. I think June is the hottest month.

Q.15 Choose the correct sentence.

A. He always loved sweets, chocolates, biscuits and cakes.
B. He always loved, sweets, chocolates, biscuits and cakes.
C. He always loved sweets, chocolates, biscuits and, cakes.
D. He always loved sweets, chocolates biscuits and cakes.

Q.16 Choose the correct sentence.

A. Didnt you hear that the exam was changed to next week.
B. Didn't you hear, that the exam was changed to next week?
C. Didn't you hear that the exam was changed to next week?
D. Did'nt you hear that the exam was changed to next week?

Q.17 Choose the correct sentence.

A. Drinks on the menu included the following, hot chocolate, iced tea and lemonade
B. Drinks on the menu included the following hot chocolate, iced tea, and lemonade.
C. Drinks on the menu included the following hot chocolate, iced tea and lemonade
D. Drinks on the menu included the following Hot chocolate, iced tea and lemonade

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Q.18 Choose the correct sentence.

A. Ali lives in dubai, the United arab emirates.

B. Ali lives in dubai, the united arab emirates.

C. Ali Lives in Dubai, in the United Arab Emirates

D. Ali lives in Dubai, the United Arab Emirates

Q.19 Choose the correct sentence.

A. Does your train leave before eight o'clock?

B. Does your train leave before eight *o clock?*

C. does your train leave before eight o'clock

D. does your train leave before eight o'clock?

Q.20 Choose the correct one:

A. The Fleming's

B. Fleming's

C. Both are correct

D. Both are wrong

Q.21 Please Samaha come as soon as possible.

Choose the correct one:

A. She visits her mother's home to nurse her.

B. She visits her's mother's home to nurse her.

C. Both are correct

D. Both are wrong

Q.22 Choose the correct one:

A. Never,never again I shall set myself up for a doctor

B. Never,never again shall I set myself up as a doctor

C. Never,never again I shall set myself up as a doctor

D. Never,never again shall i set myself up for a doctor

ANSWER KEY

1	B	11	B	21	A
2	A	12	D	22	B
3	B	13	D		
4	A	14	D		
5	C	15	A		
6	A	16	C		
7	B	17	C		
8	D	18	C		
9	A	19	A		
10	C	20	C		

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13 TOPIC IDENTIFICATION

PRACTICE EXERCISE

Q.1 Please be seated.

A. Declarative
B. Imperative
C. Interrogative
D. Exclamatory

Q.2 When I go swimming, I have to keep my eyes closed underwater.

A. Complex
B. Simple
C. Compound
D. Compound-complex

Q.3 Our car broke down, so we came last.

A. Complex
B. Simple
C. Compound
D. Compound-complex

Q.4 It is raining cats and dogs.

A. Declarative
B. Imperative
C. Interrogative
D. Exclamatory

Q.5 The students cleaned up after they finished the experiment.

A. Complex
B. Simple
C. Compound
D. None

Q.6 What a tragedy!

A. Declarative
B. Imperative
C. Interrogative
D. Exclamatory

Q.7 What is your name?

A. Declarative
B. Imperative
C. Interrogative
D. Exclamatory

Q.8 What are you doing here?

A. Declarative
B. Imperative
C. Interrogative
D. Exlamatory

Q.9 This summer our vacation should be both exiting and restful.

A. Complex
B. Simple
C. Compound
D. Compound-complex

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Q.10 I have two sisters.

A. Declarative
B. Imperative
C. Interrogative
D. Exclamatory

Q.11 Did I say anything to make you angry?

A. Declarative
B. Imperativa
C. Interrogative
D. Exclamatory

Q.12 Don't boast too "much". The underlined word is_____

A. Adverb
B. Adjetive
C. Verb
D. Noun

Q.13 At thirty, a change came "over" him. The underline is _____

A. Pronoun
B. Noun
C. Adverb
D. Preposition

Q.14 My mother was making soup in the kitchen while I was doing my work

A. Compound
B. Complex
C. Simple
D. Compound-complex

Q.15 "He is washing clothes" the sentence is:

A. Compound
B. Complex
C. Simple
D. None of them

ANSWER KEY

1	B	11	C
2	A	12	B
3	C	13	D
4	A	14	B
5	A	15	C
6	D		
7	C		
8	C		
9	B		
10	A		

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14 TOPIC SENTENCE COMPLETION

PRACTICE EXERCISE

Q.1 If mountains are _____ of trees, rains will soon wash the fertile to top sell down the slope to end as useless the below.

A. deforested
B. afforested
C. strapped
D. shortage

Q.2 One bad exam result and all her dreams were _____.

A. fled
B. shattered
C. fulfilled
D. floating

Q.3 His bag was quite _____ so I easily carried to his room.

A. cheap
B. heavy
C. light
D. short

Q.4 I have already got a _____ at a hotel in murree. We shall have no problems

A. prescription
B. property
C. reserve
D. reservation

Q.5 _____ Climbed the trees and hid in the branches

A. Deer
B. Rabbit
C. Squirrel
D. Tortoise

Q.6 This will _____ the children! Stop messing around!

A. do
B. fit
C. make
D. have

Q.7 Give her a break, it's not her _____ that the bus was late.

A. mistake
B. fault
C. error
D. flaw

Q.8 I buy a doll for my ___. She will be happy?

A. nephew
B. niece
C. uncle
D. father

Q.9 My car is out of order. Please give me _____.

A. lift
B. hand
C. car
D. bus

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Q.10 Why are you limping... one of my ———hurts.

A. fingers
B. heels
C. feet
D. wrists

Q.11 He has no ___ to prime minister.

A. excess
B. access
C. option
D. extract

Q.12 Despite heavy rain fall in the market, the traders are _____ about the loss they may incur.

A. complacent
B. disturbed
C. worried
D. irate

Q.13 The __ man paid for my ticket

A. simple
B. angry
C. kind
D. funny

Q.14 The weather of our city is _____ that's why it is not hot in summer.

A. high
B. fair
C. bright
D. mild

ANSWER KEY

1	C	11	B
2	B	12	A
3	C	13	C
4	D	14	D
5	C		
6	B		
7	B		
8	B		
9	A		
10	C		

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15 TOPIC CONJUNCTION

PRACTICE EXERCISE

Q.1 Even if the doctor put in his best efforts, he could not succeed in saving the patient.

A. even if the doctor
B. put in his best efforts, he
C. could not succeed in
D. saving the patient.

Q.2 _____ his parents allow him or not, John intends to go to the party.

A. Whether
B. While
C. Although
D. Despite

ANSWER KEY

1	A
2	A

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16 TOPIC VOCABULARY

PRACTICE EXERCISE

Q.1 We went to the President as a last _____

A. recourse
B. resort
C. resource
D. resound

Q.2 The two machines _____ considerably. One has no electric motor, the other runs on oil.

A. different
B. differentiate
C. differ
D. difference

Q.3 I'm now going to give you 10_____ tips for running a really successful web site.

A. invaluable
B. valueless
C. unworthy
D. unprofitable

Q.4 The _____ chosen for the construction of the building is in the heart of the city.

A. cite
B. slight
C. sight
D. site

Q.5 Choose the correct synonym of Juxtaposition.

A. contrast
B. wit
C. image
D. freedom

Q.6 Choose the correct synonym of Sentiment.

A. practical
B. emotion
C. dispassionate
D. realistic

Q.7 It needed the collective genius of mankind to _____ the wheel.

A. discover
B. find
C. perform
D. invent

Q.8 Choose the correct synonym of Relinquish.

A. Use
B. Surrender
C. Increase
D. Retain

Q.9 Choose the correct synonym of Waft.

A. wave
B. drift
C. stump
D. keep

Q.10 Choose the correct synonym of Innumerable.

A. limited
B. weary
C. countless
D. harmless

Q.11 Choose the correct synonym of Glistening.

A. sweating and shining
B. polishing and shining
C. reflecting or sparkling
D. sparkling or shining

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Q.12 Choose the correct synonym of Catalyst.
A. alluring
B. person or thing that causes a change
C. enticing
D. absolving

Q.13 The excuse he gave was extremely _____.
A. delicate
B. flimsy
C. slight
D. thin

Q.14 How we _____ to ageing is a choice we must make wisely.
A. respond
B. absolve
C. discharge
D. overlook

Q.15 Choose the correct synonym of Jovial.
A. Merry
B. Sad
C. Sombre
D. Laborious

Q.16 Choose the correct synonym of Bewildered.
A. Confused
B. Impressed
C. Shinned
D. Intrigued

Q.17 Choose the correct synonym of Coveted.
A. Worn
B. Greatly desired or envied
C. Eager
D. Detested

Q.18 China is one of the most _____ countries in the world.
A. popular
B. populous
C. populate
D. popularized

Q.19 Don't forget your _____. It's very cold outside, you wouldn't want to catch a cold.
A. gloves
B. underwear
C. umbrella
D. scissors

Q.20 Rainfall in the desert is not only extremely low, but also extremely _____.
A. intense
B. erratic
C. meagre
D. undesirable

Q.21 Apart from cows, buffaloes are also _____ for milk production.
A. retried
B. grown
C. developed
D. produced

Q.22 As he hated every minute of his life in the army, it is no wonder that he decided one day to his unit.
A. Desert
B. Dessert
C. Avoid
D. Suspend

Q.23 Synonym of 'Unburdened' is _____.
A. hindered
B. extort
C. free
D. encumbered

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Q.24 Synonym of 'Glared' is _____.

A. frown or blaze
B. shine or sparkle
C. grin or extinguish
D. frown or eliminate

Q.25 A contract cannot be done without_____.

A. partnership
B. documents
C. negotiation
D. signature

Q.26 Synonym of astounded is_____

A. thunderstruck
B. aware
C. seemingly
D. quite

Q.27 Antonym of bashful is_____

A. shy
B. bold
C. hated
D. permits

Q.28 Synonym of nuisance is_____

A. irritation
B. pleasant
C. peace
D. tranquility

Q.29 Antonym of purchase is_____

A. buy
B. sell
C. give up
D. quit

ANSWER KEY

1	B	11	D	21	B
2	C	12	B	22	A
3	A	13	B	23	C
4	D	14	A	24	B
5	A	15	A	25	C
6	B	16	A	26	A
7	D	17	B	27	B
8	B	18	B	28	A
9	B	19	A	29	B
10	C	20	B		

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17 TOPIC SPELLING

PRACTICE EXERCISE

Q.1 **Choose the correct spelling.**
A. Prettiest
B. Prettyest
C. Pretiest
D. Preetiest

Q.2 **Choose the correct spelling.**
A. Fual
B. Fuel
C. Fule
D. Fuil

Q.3 **Choose the correct spelling.**
A. Anothar
B. Another
C. Anuther
D. Anothere

Q.4 **Choose the correct spelling.**
A. Possesion
B. Possession
C. Posesion
D. Posession

Q.5 **Choose the correct spelling.**
A. Except
B. Exept
C. Axept
D. Exsept

Q.6 **Choose the correct spelling.**
A. Length
B. Lenth
C. Length
D. Length

Q.7 **Choose the correct spelling.**
A. Readey
B. Raddy
C. Reddy
D. Ready

Q.8 **Choose the correct spelling.**
A. Comitte
B. Commute
C. Committee
D. Committee

Q.9 **Choose the correct spelling.**
A. Doen
B. Dun
C. Don
D. Done

Q.10 **Choose the correct spelling.**
A. Arround
B. Aroad
C. Aruad
D. Around

Q.11 **Choose the correct spelling.**
A. Irresistible
B. Irresistible
C. Itesisltblc
D. Irresistibel

Q.12 Choose the correct spelling.
A. Probaly
B. Probably
C. Probebly
D. Probly

Q.13 Choose the correct spelling.
A. Adeem
B. Address
C. Addies
D. Adness

Q.14 Choose the correct spelling.
A. Something
B. Somthing
C. Sumthing
D. Sumthin

Q.15 Choose the correct spelling.
A. Doe's not
B. Does'nt
C. Doesn't
D. Does'ot

Q.16 Choose the correct spelling.
A. Calander
B. Calender
C. Celandar
D. Calendar

Q.17 Choose the correct spelling.
A. Length
B. Length
C. Length
D. Lngthe

Q.18 Choose the correct spelling.
A. Committee
B. Comite
C. Commite
D. Commetee

Q.19 Choose the correct spelling.
A. Listen
B. Lasten
C. Listan
D. Lestin

Q.20 Choose the correct spelling.
A. Anneversary
B. Annivarsary
C. Anniversary
D. Annaversary

Q.21 Choose the correct spelling.
A. Ocured
B. Occurred
C. Ocourred
D. Occuread

ANSWER KEY

1	A	11	A	21	B
2	B	12	B		
3	B	13	B		
4	B	14	A		
5	A	15	C		
6	A	16	A		
7	D	17	A		
8	D	18	A		
9	D	19	A		
10	D	20	C		

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18 TOPIC READING COMPREHENSION

PRACTICE EXERCISE

Direction: Read the following lines to answer the questions (Question 1&2).

Use of electric mail has been widespread for more than a decade. E-mail simplifies the flow of ideas, connects people from distant offices, eliminates the need for meetings, and often boost productivity. However, e-mail should be carefully managed to avoid unclear and inappropriate communication. E-mail messages should be concise and limited to one topic. When complex issues need to be addressed, phone calls are still best.

Q.1 The main idea of the paragraph is that e-mail:

A. Is not always the easiest way to connect people from distant offices.

B. Ha changed considerably since it first began a decade ago.

C. Causes people to be unproductive when it is used incorrectly.

D. Is effective for certain kinds of messages but only if managed wisely.

Q.2 Which of the following would be the most appropriate title for the passage?

A. Appropriate Use of E-Mail

B. E-mail's Popularity

C. E-mail: The Ideal Form of Communication

D. Why Phone Calls Are Better Than E-Mail

ANSWER KEY

1	D
2	A

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1 TOPIC

LOGICAL-DIVERSITY (LETTERS AND SYMBOL SERIES)

PRACTICE EXERCISE

LETTER AND SYMBOL SERIES

Q.1 If " * " means "/" , "–" means " * ", "+" means "–"and "/" means "+" then, $\left(3-\frac{15}{19}\right)*8+3=?$

A. 5
B. $\frac{279}{19}$
C. 3
D. 8

Q.2 If you divide 30 by half and add ten, what do you get?

A. 12
B. 25
C. 20
D. None

Q.3 Find the missing alphabet: A, E, J, P, W, ?

A. E
B. F
C. G
D. D

Q.4 Complete the series A2, B4, C8, D16, E?

A. 32
B. 34
C. 36
D. 38

Q.5 Complete the series A25, B625, C15625, ____?

A. D390625
B. D364748
C. D390524
D. D390525

Q.6 Look at this series 14, 28, 20, 40, 32, 64. What number should come next?

A. 52
B. 56
C. 96
D. 128

Q.7 CMM, EOO, GQQ, _____, KUU

A. GRR
B. GSS
C. ISS
D. ITT

Q.8 Complete the series A2.5, B5, C7.5, ____?

A. D9
B. D10
C. D9.5
D. D45

Q.9 Complete the series ACD, AGD, AJD, ___?

A. ABD
B. ATD
C. AND
D. AMD

Q.10 If '–' means '+', '+' means '–', '×' means '÷' and '÷' means '×' then which of the following will be the correct equation?

A. $30+5+14-10\times15=122$
B. $10+5-14\div10\times15=158$
C. $30-5+14\div10\times15=162$
D. $30\times5-4\div10+15=31$

Q.11 Complete the series A3.3, B6.6, C9.9, _____?

A. D13.4
B. D13.2
C. D13.1
D. D13.3

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Q.12 Look at this series: 53, 53, 40, 40, 27, 27, ... What number should come next?

A. 12
B. 27
C. 14
D. 53

Q.13 Look at this series: 7,10,8,11,9,12,... What number should come next?

A. 7
B. 10
C. 12
D. 13

Q.14 23rd letter of English alphabets

A. X
B. W
C. Z
D. Y

Q.15 Complete the series. F16, H32, J48,-__.

A. K66
B. L64
C. M68
D. N90

Q.16 Look at this series 5.2, 4.8, 4.4, 4. What number should come next

A. 3
B. 3.3
C. 3.5
D. 3.6

Q.17 Which letter comes before G and after E?

A. B
B. C
C. F
D. D

Q.18 Look at this series: 22, 21, 23, 22, 24, 23,... What number should come next?

A. 22
B. 24
C. 25
D. 26

Q.19 Complete the series AB, EF, _____, MN

A. IJ
B. RS
C. WX
D. MN

Q.20 Look at this series 80, 10, 70, 15, 60. What number should come next?

A. 20
B. 25
C. 30
D. 50

Q.21 If the value of $B=16, E=64, K=256,$ then $O=?$

A. 526
B. 1024
C. 834
D. 1012

Q.22 Look at this series: $2,1,\left(\frac{1}{2}\right),\left(\frac{1}{4}\right),...$ What number should come next

A. $\left(\frac{1}{3}\right)$
B. $\left(\frac{1}{8}\right)$
C. $\left(\frac{2}{8}\right)$
D. $\left(\frac{1}{16}\right)$

Look at this series: 36, 34, 30, 28, 24,... What number should come next?

A. 22
B. 26
C. 23
D. 20

ANSWER KEY

1	A	6	B	11	B	16	D	21	B
2	D	7	C	12	C	17	C	22	B
3	A	8	B	13	B	18	C	23	A
4	A	9	C	14	B	19	A		
5	A	10	D	15	B	20	A		

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2 TOPIC

LOGICAL-DIVERSITY (LOGICAL PROBLEMS)

PRACTICE EXERCISE

Q.1 **Statements:**

Cats are mammals. Dogs are mammals.

Conclusions:

I. Cats and dogs are mammals

II. Cats are dogs

A. Only I

B. Both I and II

C. Only II

D. None

Q.2 **Statements:**

Some cats are rats. All rats are trees. Some trees are not cats.

Conclusions:

I. Some trees are cats.

II. All cats are trees.

III. All rats are cats.

IV. No tree are cats.

A. I is valid

B. II is valid

C. III is valid

D. II and III are valid

Q.3 **Statements:**

Some papers are pens. Angles is a paper.

Conclusions:

I. Angle is not a pen.

II. Angle is a pen

A. Only conclusion II follows

B. Either I or II follows

C. Neither I nor II follows

D. Both I and II follows

Q.4 **Statements:**

All film stars are playback singers. All film directors are film stars.

Conclusions:

I. All film directors are playback singers.

II. Some film stars are film directors.

A. Only conclusion II follows

B. Either I or II follows

C. Neither I nor II follows

D. Both I and II follow

Q.5 **Statements:**

All fish are tortoise. No tortoise is a crocodile.

Conclusions:

I. No crocodile is a fish.

II. No fish is crocodile.

A. Only conclusion II follows

B. Neither I nor II follows

C. Either I or II follows

D. Both I and II follow

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Q.6 **Statements:**

No cities are countries. No countries are villages

Conclusions:

I. Some countries are cities.

II. No villages are the city.

A. Only conclusion I follows
B. Only conclusion II follows
C. Both conclusions follows
D. Both of them do not follow

Q.7 **Statements:**

All apples are bananas. No banana is a mango. Some mangoes are oranges.

Conclusions:

I. All oranges can never be bananas.

II. Some mangoes are apples.

A. Only conclusion I follows
B. Only conclusion II follows
C. Both conclusions follow
D. Both of them do not follow

Q.8 **Statements**

No rings are bangles. All gold are rings.

Conclusions

I. No bangles are gold.

II. Some rings are gold.

A. Only conclusion I follows
B. Only conclusion II follows
C. Both conclusions follow
D. Both of them do not follow

Q.9 **Statement**

All clocks are watches. Some clocks are alarms.

Conclusion

I. Some alarm are watches.

II. All watches are alarm

A. Only conclusion I follows
B. Only conclusion II follows
C. Both conclusions follow
D. Both of them do not follow

Q.10 **Statements:**

Some pastries are toffees. All toffees are chocolates.

Conclusions:

I. Some chocolates are toffees.

II. Some toffees are not pastries.

A. Only conclusion I follows
B. Only conclusion II follows
C. Either I or II follows
D. Neither I nor II follows

ANSWER KEY

1	A	2	A	3	C	4	D	5	D
6	D	7	A	8	C	9	A	10	A

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PRACTICE EXERCISE

Q.1 **If Sania runs faster than Aneela and Aneela runs slower than Faiza, then:**
A. Sania and Faiza have same speed
B. Sania have highest speed
C. Faiza have highest speed
D. Highest speed cannot be predicted

Q.2 Mara runs faster than Gail.
Lily runs faster than Mara.
Gail runs faster than Lily.
If the first two statements are true, the third statement is.
A. True
B. False
C. Uncertain
D. None of these

Q.3 **Four people were witnessed as assaulted at an incident. Each of them have their own description of the scene. Which one will be probably right?**
A. He was average height, thin, and middle aged
B. He was tall, thin, and middle aged
C. He was tall, thin and young
D. He was tall, of average weight, and middle aged

Q.4 **Statements:**
$A > B, B \geq C, C < D$
Conclusions
(I) $A > C$
(II) $A = C$
A. Only I is true
B. Only II is true
C. Either I or II true
D. Neither I nor II is true

Q.5 **Fact 1: A boy have a four cars**
Fact 2: Two of the cars are red
Fact 3: He have one sports car
If the above three statements are facts than which of the following statement will also be a fact.
I. The boy have red sports car
II. He have 2 corolla
III. His favorite color is red.
A. Only I and II
B. Only II
C. Only III
D. None of the statement is a fact

.6 **Fact 1: All drink mixes are beverages**
Fact 2: All beverages are drinkable
Fact 3: Some beverages are red
If the above three statements are facts than which of the following statement will also be a fact.
I. Some drink mixes are red.
II. All beverages are drink mixes.
III. All red drink mixes are drinkable
A. I only
B. II only
C. III only
D. None of them is a fact

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Q.7 **Fact 1: Ayesha said Hamza and I both have cats**
Fact 2: Hamza said I don't have a cat
Fact 3: Ayesha always tells the truth but Hamza sometimes lies if the above three statements are facts than which of the following statements will also be a fact.

I. **Ayesha has a cat**
II. **Hamza has a cat**
III. **Hamza is lying**

A. Only I
B. Only II
C. Only III
D. All the statements are known facts

Q.8 **Children are in pursuit of a dog whose leash has broken. James is directly behind the dog. Ruby is behind James. Rachel is behind Ruby. Max is ahead of the dog waking down the street in the opposite direction. As the children and dog pass, Max turns around and joins the pursuit. He runs in behind Ruby. James runs faster and is alongside the dog on the left. Ruby runs faster and is alongside the dog on the right. Which child is directly behind the dog?**

A. James
B. Rachel
C. Ruby
D. Max

Q.9 **The high school math department needs to appoint a new chairperson, which will be based on seniority. Ms. West has less seniority than Mr. Temple, but more than Ms. Brody. Mr. Rhodes has more seniority than Ms. West, but less then Mr. Temple. Mr. Temple doesn't want the job. Who will be the new math department chairperson?**

A. Mr. Rhodes
B. Mr. Temple
C. Mr. West
D. Mr. Brody

Q.10 **The hotel is two blocks east of the drugstore.**
The market is one block west of the hotel.
The drugstore is west of the market.
If the first two statements are true, the third statement is

A. True
B. False
C. Uncertain
D. None of these

Q.11 **Fact 1 All hats have brims**
Fact 2 there are black hats and blue hats
Fact 3 Baseball caps are hats If the above three statements are facts than which of the following statement will also be a fact

I. **All caps have brims**
II. **Some baseball caps are blue.**
III. **Baseball caps have no brims**

A. I only
B. II only
C. III only
D. None of them is a fact

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Q.12 A four-person crew from Classic Colors is painting Mr. Zohaib's house. Ahmed is painting the front of the house. Maira is in the alley behind the house painting the back. Ayesha is painting the window frames on the north side, Hamza is one the south. If Zohaib switches places with Ayesha, and Ayesha then switches places with Hamza, where is Hamza

A. In the alley behind the house
B. On the north side of the house
C. In front of the house
D. On the south side of the house

Q.13 Four friends in the fifth grade were sharing a pizza. They decided that the oldest friend would get the extra piece. Zara is two month older than Mohib, who is three months younger than kiran. Minal is one month older than Mohib. Who should get the extra piece of pizza?

A. Zara
B. Mohib
C. Kiran
D. Minal

Q.14 On the day Bilal triplets are born,
Jamila weighs more than Javed.
Javed weighs less than Junaid.
Of the three babies, Junaid weighs the most.
If the first two statements are true, the third statement is

A. True
B. False
C. Uncertain
D. None of these

Q.15 Blueberries cost more than strawberries.
Blueberries cost less than raspberries.
Raspberries cost most than strawberries and blueberries.
If the first two statements are true, the third statement is

A. True
B. False
C. Uncertain
D. None of these

Q.16 During the past year, Jamshed saw more movies than Sadia.
Sadia saw fewer movies than Dawood.
Dawood saw more movies than Jamshed.
If the first two statements are true, the third statement is

A. True
B. False
C. Uncertain
D. None of these

Q.17 Mariam is sitting in the desk behind Javed.
Javed is sitting in the desk behind Bilal.
Bilal is sitting in the desk behind Mariam.
If the first two statements are true, the third statement is

A. True
B. False
C. Uncertain
D. None of these

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Q.18 **The Emporium Mall has more stores than the Pakages Mall.**
The Amanah Mall has fewer stores than the Pakages Mall.
The Emporium Mall has more stores than the Amanah Mall.
If the first two statements are true, the third statement is

A. True
B. False
C. Uncertain
D. None of these

Q.19 **Islamabad is north of Balochistan.**
Balochistan is east of Lahore.
Lahore is northwest of Islamabad.
If the first two statements are true, the third statement is

A. True
B. False
C. Uncertain
D. None of these

Q.20 **Battery X lasts longer than Battery Y.**
Battery Y doesn't last as long as Battery Z.
Battery Z lasts longer than Battery X.
If the first two statements are true, the third statement is

A. True
B. False
C. Uncertain
D. None of these

ANSWER KEY

1	D	6	D	11	D	16	C
2	B	7	D	12	C	17	B
3	B	8	D	13	C	18	A
4	A	9	A	14	C	19	B
5	D	10	A	15	A	20	C

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4 TOPIC

LOGICAL-DIVERSITY (COURSE OF ACTION)

PRACTICE EXERCISE

Q.1 **Statement:**

There is substantial increase in the number of accidents causing deaths and severe injuries due to malfunctioning of the traffic signals.

Course of Actions:

I. The traffic police should immediately post traffic personnel at the junctions.

II. The signal system should immediately be repaired or replaced.

A. If only I follow
B. If only II follow
C. If either I or II follows
D. If neither I nor II follows
E. If both I and II follows

Q.2 **Statement:**

A large number of people in ward X of the city are diagnosed to be suffering from a fatal malaria type.

Courses of Actions:

I. The city municipal authority should take immediate steps to carry out extensive fumigation in ward X.

II. The people in the area should be advised to take steps to avoid mosquito bites.

A. Only I follows
B. Only II follows
C. Either I or II follows
D. Neither I nor II follows
E. Both I and II follow

Q.3 **Statement:**

Power Supply in state X is terribly poor.

Course of Actions:

I. WAPDA should urgently take action against power theft.

II. The government should generate more power.

A. If only I is most appropriate
B. If only II is most appropriate
C. If neither I nor II is appropriate
D. Both I and II are appropriate

Q.4 **Statement:**

The sale of a particular product has gone down considerably causing great concern to the company.

Course of Actions:

I. The company should make a proper study of rival products in the market.

II. The price of the product should be reduced and quality improved.

A. If only I is most appropriate
B. If only II is most appropriate
C. If neither I nor II is appropriate
D. Both I and II are appropriate

Q.5 **Statement:**

Every year, at the beginning or at the end of the monsoon we have some cases of conjunctivitis but this year it seems to be a major epidemic witnessed after nearly four year.

Course of Actions:

I. Precautionary measures should be taken after every four years to check this epidemic.

II. People should be advised to drink boiled water during winter season.

A. If only I is most appropriate
B. If only II is most appropriate
C. If neither I nor II is appropriate
D. Both I and II are appropriate

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Q.6 Statement:
People residing in some tribal areas are far from education.
Course of Actions:
I. Government should render all help to the NGOs to open schools there.
II. A mass awareness programme must be initiated in these areas.
III. Social workers should be entrusted with the job of educating them.
A. If only I is most appropriate
B. If only II is most appropriate
C. If only III is most appropriate
D. Both I and II are appropriate

Q.7 Statement
In a specific area of a country an acute famine have appeared
Course of Actions:
I. Major facilities of water and food should be provided straight away in that area.
II. Financial support should be given to bothered individuals to the from the Government.
A. Both of them follows
B. None of them follows
C. Only I follow
D. Only II follows

Q.8 Statement:
The availability of imported fruits has increased in the indigenous market and so the demand for indigenous fruits has been decreased.
Course of Actions:
I. To help the indigenous producers of fruits, the Government should impose high import duty on these fruits, even if these are not of good quality.
II. The fruit vendors should stop selling imported fruits. So that the demand for indigenous fruits would be increased.
A. Both of them follows
B. None of them follows
C. Only I follows
D. Only II follows

Statement:
According to reports the childrens below age 10 are being aggressive because of mobile phones
Course of Actions:
I. Parents needs to be strict to their child.
II. Parents need to be concerned and lemmatize their screening time.
A. Both of them follows
B. None of them follows
C. Only I follows
D. Only II follows

Q.10 Statement:
The Management of School M has decided to give free breakfast from next academic year to all the students in its primary section through its canteen even though they will not get any government grant.
Courses of Actions:
I. The school will have to admit many poor students who will seek admission for the next academic year.
II. The canteen facilities and utensils have to be checked and new purchases to be made to equip it properly.
III. Funds will have to be raised to support the scheme for years to come.
A. Only II and III follows
B. Only III and I follow
C. Only I and II follow
D. Only I follows

Q.11 **Statement:**
There has been an unprecedented increase in the number of successful candidates in this year's School Leaving Certificate Examination.
Course of Actions:
I. **The government should make arrangements to increase number of seats of intermediate courses in existing colleges.**
II. **The government should take active steps to open new colleges to accommodate all these successful candidates.**
A. Both of them follows
B. None of them follows
C. Only I follow
D. Only II follows

Q.12 **Statement:**
A smoker has left smoking suddenly
Course of Actions:
I. **He will feel restlessness and anxiety.**
II. **He will start gaining weight**
A. Both of them follows
B. None of them follows
C. Only II follows
D. Only I follows

Q.13 **Statement**
As stated in the recent report the female to male ratio is alarmingly low.
Course of Actions:
I. **The government should conduct another census to verify the results.**
II. **The government should immediately issue orders to all the departments to encourage people to improve the ratio.**
A. Both of them follows
B. None of them follows
C. Only I follow
D. Only II follows

Q.14 **Statement:**
The ratio is poverty is at alarming point in our country.
Course of Actions:
I. **The Government needs to take step for economic and development growth.**
II. **The lower class area of people in our country needs to be supported as most of them lives hand to mouth.**
A. Both of them follows
B. None of them follows
C. Only I follows
D. Only b follows

Q.15 **Statement:**
The Government has decided not to provide financial support to voluntary organisations from next Five Year Plan and has communicated that all such organisations should raise funds to meet their financial needs.
Course of Actions:
I. **Voluntary organisations should collaborate with foreign agencies.**
II. **They should explore other sources of financial support.**
A. Both of them follows
B. None of them follows
C. Only I follows
D. Only II follows

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Q.16 Statement

The management of hospitals are getting worse day by day. The doctors are so confused and they don't even know how to tackle bunch of patients.

Courses of Actions:

I. **Our Government should increase medical seats. So that we can get more doctor every year. In this case the stress on medical staff will increase as well.**

II. **The Government should provide and develop strategies for medical staff and hospitals**

A. Both of them follows
B. None of them follows
C. Only I follows
D. Only II follows

Q.17 Statement

There has been an unprecedented increases in the number of requests for seats in most of the long distance trains during the current holiday season.

Course of Actions:

I. **The people seeking accommodation should be advised to make their travel plan after the holiday.**

II. **The railway authority should immediately increase the capacity in each of these trains by attaching additional coaches.**

A. Both of them follows
B. None of them follows
C. Only I follows
D. Only II follows

Q.18 Statement

The statement there is an unprecedented increase in migration of villagers to urban areas as repeated crop failure has put them into precarious financial situation.

Course of Actions:

I. ***The villagers should be provided with alternate source of income in their villages which will make them stay put.***

II. ***The migrated villagers should be provided with jobs in the urban areas to help them survive. Authority should immediately increase the capacity in each of these trains by attaching additional coaches.***

A. *Only I follows*
B. Only II follows
C. *Either I or II follows*
D. Both I and II follows

ANSWER KEY

1	C	6	C	11	D	16	D
2	E	7	B	12	D	17	C
3	D	8	B	13	A	18	C
4	C	9	A	14	D		
5	D	10	A	15	D		

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TOPIC 5 LOGICAL-DIVERSITY (CAUSE AND EFFECT)

PRACTICE EXERCISE

Q.1 **Statements:**

I. **The prices of petrol and diesel in the domestic market have remained unchanged for the past few months.**

II. **The crude oil prices in the international market have gone up substantially in the last few months.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both the statements I and II are independent causes
D. Both the statements I and II are effects of independent causes
E. Both the statements I and II are effects of some common cause

Q.2 **Statements:**

I. **All the schools in the area had to be kept closed for most part of the week.**

II. **Many parents have withdrawn their children from the local schools.**

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.3 **Statements:**

I. **The Government has imported large quantities of sugar as per trade agreement with other countries.**

II. **The prices of sugar in the domestic market have fallen sharply in the recent months.**

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.4 **Statements:**

I. **There is a sharp decline in the production of rice this season.**

II. **The government has decided to increase the import of rice.**

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.5 **Statements:**

I. **The government has taken the new initiative in which the fee charged by the unaided institutions has been reduced as compared to last year.**

II. **The students have protested against the high fee last year.**

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

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Q.6 Statements:

I. Our country is facing economic crisis.

II. The country is showing sign of poverty.

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.7 Statements:

I. All the sweets were rotten.

II. Many people got sick after eating sweets from local shop.

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.8 Statements:

I. The number of computer's owner have increased.

II. The computer education is necessary in primary and secondary schools.

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.9 Statements:

I. The legal council has instructed all the evening law colleges to shut down the upcoming academic session.

II. The quality of education delivered in the evening law colleges was not up the mark.

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.10 Statements:

I. The art gallery will be closed for two weeks.

II. The art gallery is under renovation.

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Statements:

I. The university graduate claims that it is hard to find a job in this era.

II. There is a ratio of unemployment on a large scale.

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

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Q.12 **Statements:**

I. **There has been opposition by the protestors over the government's decision of removal of subsidy on fertilizers.**

II. **The government has decided to remove subsidy on some of the items to bring a reform to the economy.**

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.13 **Statements:**

I. **The private medical colleges have increased the tuition fees in the current year by 200 per cent over the last year's fees to meet the expenses.**

II. **The Government medical colleges have not increased their fees in spite of price escalation.**

A. If statement I is the cause and statement II is its effect
B. If statement II is the cause and statement, I is its effect
C. If both the statements I and II are independent causes
D. If both the statements I and II are effects of independent causes
E. If both the statements I and II are effects of some common cause

Q.14 **Statements:**

I. **The police authority has recently caught a group of house breakers.**

II. **The citizens group in the locality have started night vigil in the area.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both the statements I and II are independent causes
D. Both the statements I and II are effects of independent causes
E. Both the statements I and II are effects of some common cause

Q.15 **Statements:**

I. **Standard of living among the middle class society is constantly going up since part of few years.**

II. **Pakistan Economy is observing remarkable growth.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both the statements I and II are independent causes
D. Both the statements I and II are effects of independent causes
E. Both the statements I and II are effects of some common cause

Q.16 **Statements:**

I. **The farmers have decided against selling their kharif crops to the Government agencies.**

II. **The Government has reduced the procurement price of kharif crops starting from last month to the next six months.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both the statements I and II are independent causes
D. Both the statements I and II are effects of independent causes
E. Both the statements I and II are effects of some common cause

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Q.17 **Statements:**

I. **Large number of people living in the low-lying areas has been evacuated during the last few days to safer places.**

II. **The Government has rushed in relief supplies to the people living in the affected areas.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both the statements I and II are independent causes
D. Both the statements I and II are effects of independent causes
E. Both the statements I and II are effects of some common cause

Q.18 **Statement:**

I. **The school authority has asked the FSc students to attend special classes to be conducted on Sundays.**

II. **The parents of the FSc students have withdrawn their wards from attending private tuitions conducted on Sundays**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both the statements I and II ae independent causes
D. Both the statements I and II are effects of some common cause

Q.19 **Statements:**

I. **The dialogue between Jinnah and Gandhi failed.**

II. **Indian National Congress and Muslim League tried to join hands, so they will be united.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent cause

Q.20 **Statement:**

I. **An interior minister has been found as the owner of assets more than the stated income.**

II. **The prime minister has ordered all the ministers to unveil their assets.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent cause

21 **Statement:**

I. **There is unprecedented increase in the number of young unemployed in comparison to the previous year.**

II. **A large number of candidates submitted applications against an advertisement for the post of manager issued by a bank.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent cause

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Q.22 **Statement:**

I. **The literacy rate in the district has been increasing for the last four years.**

II. **The district administration has conducted extensive training programme for the workers involved in the literacy drive.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of common cause

Q.23 **Statement:**

I. **Police resorted to lathi-charge to disperse the unlawful gathering of large number of people.**

II. **The citizens' forum called a general strike in protest against the police atrocities.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent cause

Q.24 **Statement:**

I. **There has been a decline in the prices of the personal computers.**

II. **School going kids are expressing interests in learning how the computer operates.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent cause

Q.25 **Statement:**

I. **Majority of the citizens in the locality belongs to higher income group.**

II. **The sales in the local supermarket are comparatively much higher than in other localities.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent cause

Q.26 **Statements:**

I. **Large number of Primary Schools in the rural areas is run by only one teacher.**

II. **There has been a huge dropout from the primary schools in rural areas.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent cause

Q.27 **Statements**

I. **The childrens are being aggressive today.**

II. **There is no specific limit for childrens to use mobile screens**

A. Statement I is the cause and statement II is the effect
B. Statement II is the cause and statement I is the effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of some common cause

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Q.28 Statement

I. **The university authority has instructed all the colleges under its jurisdiction to ban use of all phones inside the college premises.**

II. **Majority of the teachers of the colleges signed a joint petition to the university complaining the disturbances caused by cell phone ringtones inside the classrooms.**

A. Statement I is the cause and statement II is the effect
B. Statement II is the cause and statement I is the effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of some common cause

Q.29 Statements:

I. **She topped in her collage**

II. **She is hard-working**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

Q.30 Statement:

I. **The life today is too fast, demanding and full of variety in all aspects which at times leads to stressful situations.**

II. **Number of suicide cases among teenagers is on increase.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

Q.31 Statement:

I. **There is sharp decline in the production of oil seeds this year.**

II. **The government has decided to increase the import quantum of edible oil**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

Q.32 Statements:

I. **There are orders by the high court to clean Karachi.**

II. **More than 500 people died in Karachi due to land pollution.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

3 Statement

I. **The new program has been introduced with ordeal.**

II. **The government has announced a plan on the creation of the TV programs**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

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Q.34 Statements:

I. **Amna's baby died at birth, she wanted another immediately.**

II. **Amna abducted the infant and took it out of the hospital.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

Q.35 Statement:

I. **Most of the steel producing companies in the country have made considerable profit during the last financial year.**

II. **Many Asian countries have been importing huge quantities of steel from Pakistan.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

Q.36 Statements:

I. **He have got cavity in his tooth**

II. **He eats too much chocolates**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are of common causes

Q.37 Statement:

I. **The performance of most of the students in final exam of class X in the schools run by the government was excellent.**

II. **Many teachers of government schools left the school and joined private schools.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

Q.38 Statement:

I. **Majority of the students in the college expressed their opinion against the college authority's decision to break away from the university and become autonomous.**

II. **The university authorities have expressed their inability to provide grants to its constituent colleges.**

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of some common causes

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Q.39 Statement:

I. The selection team has decided to keep the same players for the final match of the series against Australia.

II. England got the victory against Australia.

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of some common causes

Q.40 Statements:

I. The government has decided to roll back the hike in the prices of cooking gas and kerosene.

II. Some minister had resigned in protest against the hike in prices of cooking gas and other petroleum products.

A. I is cause and II is effect
B. II is cause and I is effect
C. Both are independent causes
D. Both are effects of independent causes

Q.41 Statement:

I. All the schools in the area had to be kept closed for most part of the week.

II. Many parents have withdrawn their children from the local schools.

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

Q.42 Statement:

I. The government has decided to make all the information related to primary education available to the general public.

II. In the past, the general public did not have access to all these information related to primary education.

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

.43 Statements:

I. The department of finance has levied more taxes.

II. The economic shortfall of the country has slashed.

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent causes

Statements

I. Many people prefer to shop at the big retail chains than the local grocery stores.

II. Retail chains offer discount of more than 25% as compared to local grocery shops.

A. I is cause and II is effect
B. II is cause and I is effect
C. Both are independent causes
D. Both are effects of independent causes

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Q.45 Statements

I. The student was expelled from the school.

II. He was found using the drugs.

A. Statement I is the cause and statement II is its effect

B. Statement II is the cause and statement I is its effect

C. Both statements I and II are independent causes

D. Both statements I and II are the effects of independent cause

Q.46 Statements:

I. The PIC doctors are on a strike.

II. The patient has died in PIC, due to non-availability of the doctor for the check-up.

A. Statement I is the cause and statement II is its effect.

B. Statement II is the cause and statement I is its effect.

C. Both statement I and II are the effects of independent causes

D. Both statement I and II are effects of some common cause

Q.47 Statements:

I. The construction of dams has created an obstruction in migration of the animals

II. The animals of Amazon have turned into ferocious beasts, that are damaging the property as well as a threat for the lives of people.

A. Statement I is the cause and statement II is its effect.

B. Statement II is the cause and statement I is its effect.

C. Both statements I and II are independent causes

D. Both are effects of independent causes

ANSWER KEY

1	D	11	B	21	A	31	A	41	D
2	D	12	B	22	B	32	B	42	B
3	A	13	D	23	A	33	B	43	B
4	A	14	E	24	D	34	A	44	B
5	B	15	A	25	A	35	B	45	B
6	A	16	B	26	A	36	B	46	A
7	A	17	E	27	B	37	D	47	D
8	D	18	A	28	B	38	B		
9	B	19	D	29	B	39	A		
10	B	20	D	30	A	40	A		

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6 TOPIC

LOGICAL-DIVERSITY (MISCELLANEOUS PROBLEMS)

PRACTICE EXERCISE

Q.1 Pick the odd one out:
A. Heart
B. Kidney
C. Lungs
D. Life

Q.2 Champion cannot exist without_____:
A. Running
B. Swimming
C. Winning
D. Speaking

Q.3 Saddle cannot exist without_____:
A. Horse
B. Seat
C. Stirrups
D. Horn

Q.4 The age of Ali is two times than her sister and her sister is 39 years old. Find the age of Ali?
A. 80
B. 78
C. 82
D. 77

Q.5 Contract cannot exist without _____ :
A. Agreement
B. Document
C. Written
D. Attorney

Q.6 Autograph cannot exist without _____ :
A. Athlete
B. Actor
C. Signature
D. Pen

Q.7 Bonus cannot exist without _____ :
A. Reward
B. Raise
C. Cash
D. Employer

Q.8 Swimming cannot exist without _____ :
A. Pool
B. Bathing suit
C. Water
D. Life jacket

Q.9 School cannot exist without _____ :
A. Student
B. Report card
C. Test
D. Learning

Q.10 Book cannot exist without _____ :
A. Fiction
B. Pages
C. Pictures
D. Learning

Q.11 Which word does NOT belong with the others?
A. Book
B. Index
C. Glossary
D. Chapter

Pick the odd one:
A. Aids
B. Hepatitis
C. Jaundice
D. Health

13 Pick the odd-pair of words.
A. Petrol-Car
B. Coal-Engine
C. Water-Fire
D. Oil-Lamp

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Q.14 Only one meaningful word can be formed by rearranging the letters of the given jumbled word. Find out that word. MUSPOPAPOTIH
A. MEATAMORPHIC
B. PHILANTHROPIST
C. HIPPOCAMPUS
D. HIPPOPOTAMUS

Q.15 If SINDH is coded as THOCI then PUNJAB is coded as:
A. BAJNUP
B. BALOCHISTAN
C. QTOIBA
D. HDNIS

Q.16 Choose the odd one.
A. Herb
B. Flower
C. Tree
D. Shrub

Q.17 Find the different one
A. Mother
B. Sister
C. Maid
D. Aunt

Q.18 A competition always has
A. Reward
B. Rivals
C. Spectators
D. Referee

Q.19 Which word does NOT belong with the others?
A. Index
B. Glossary
C. Chapter
D. Book

Q.20 How many such pairs of letters are there in the word 'HISTORICAL' which have as many letters between them in the word as they have between them in the English alphabet?
A. Four
B. Six
C. Five
D. Eight

Q.21 Discernible and Palpable have ____ number of same letter
A. 2
B. 3
C. 5
D. 4

Q.22 What should come next to it infirmary
A. Surgery
B. Disease
C. Patient
D. Receptionist

Q.23 What should some next to save, secure, protest,
A. Guard
B. Lock
C. Conserve
D. Humble

Q.24 Which one of the following have four sides
A. Triangle
B. Square
C. Circle
D. Right triangle

Q.25 Renown, Reputation, Abeyance,?
A. Misery
B. Humble
C. Discontinuation
D. Best

Q.26 If in a certain language, NOIDA is coded as OPJEB, how is DELHI coded in that language?
A. CDKGH
B. EFMIJ
C. FGNJK
D. IHLED

Q.27 Chef : Restaurant
A. Doctor: Nurse
B. Driver: Passenger
C. Teacher: Schools
D. Writer: Editor

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Q.28 The area of a triangle will be $a = 1m, b = 2m, c = 3m$, a, b, c being lengths of respective sides.

A. 0 sq m
B. 3 sq m
C. 2 sq m
D. Both A and B

Q.29 Which one does not belong to others?

A. Apple
B. Mango
C. Cucumber
D. Orange

Q.30 What is the multiplicative inverse of $\frac{1}{2}$?

A. -2
B. 2
C. $-\frac{1}{2}$
D. Both A and B

Q.31 Quote and Poet have _____number of same letters

A. 5
B. 4
C. 3
D. 2

Q.32 What should come next to Confound, Illiterate, Bewilder, ... ?

A. Kind
B. Unlearned
C. Normal
D. Disable

Q.33 First step in graphing linear equation is to

A. Connect two points
B. Extend straight line
C. Identify and plot coordinates
D. Both A and B

Q.34 What is the common vowel in Apple and Banana?

A. E
B. P
C. A
D. M

Q.35 The set of all real numbers under the usual multiplication operation is not a group since

A. Zero has no inverse
B. Identity element does not exist
C. Multiplication is not associative
D. Both A and B

Q.36 Measure is to caliper as direction is to

A. Speed
B. Needle
C. Hiking
D. Compass

Q.37 Which letter lies in the middle of word Quality?

A. L
B. A
C. U
D. Y

Q.38 If $a - b = 3$ and $a^2 + b^2 = 29$, find the value of ab.

A. 10
B. 15
C. 12
D. Both A and B

Q.39 Arrange the following words in a meaningful sequence.

1. Infection 2. Consultation. 3. Doctor 4. Treatment 5. Recovery

A. 1,3,4,5,2
B. 1,3,2,4,5
C. 1,2,3,4,5
D. 2,3,5,1,4

Here are some words translated form an artificial language. Dionot means oak tree, blyonot means oak leaf, blycrin means maple leaf, which word could mean "maple syrup"?

A. Blymuth
B. Hupponot
C. Patrician
D. Crinweel

Q.41 At what time between 4 and 5 o'clock will the hands of a watch point in opposite directions?

A. $\left(54+\frac{6}{11}\right)$ past 4
B. $\left(54+\frac{8}{11}\right)$ past 4
C. $\left(53+\frac{7}{11}\right)$ past
D. Both A and B

Q.42 Aware is to alert as prompus is to

A. Scarcely
B. Impolitely
C. Bragging
D. Quietly

Q.43 The yard is to inch as quart is to

A. Gallon
B. Bounce
C. Milk
D. Liquid

Q.44 Here are some words translated from an artificial language. granamelke means big tree, pinimelke means little tree, melkehoon means tree house, which word could mean big house?

A. Granahoon
B. Pinishur
C. Pinihoon
D. Melkegrana

Q.45 Gym is to exertion as consuming is to

A. Food
B. Dieting
C. Fitness
D. Eatery

Q.46 Durnadal is to race as sleep is to

A. Winter
B. Bear
C. Dream
D. Hibernation

Q.47 What should come next to it book

A. Pages
B. Learning
C. Pictures
D. Eraser

Q.48 Secondary is too informal as honest is to

A. Frank
B. Sincere
C. Truth full
D. Wicked

Q.49 What should come next to it recipe

A. Desserts
B. Spoon
C. Utensils
D. Cookbook

Q.50 Discernible and Palpable have number same letter

A. 2
B. 3
C. 5
D. 4

Q.51 A thermometer is to temperature as a compass is to

A. Pressure
B. Humidity
C. Direction
D. Needle

Q.52 Which word does not belong to others?

A. Tiger
B. Leopard
C. Duck
D. Elephant

Q.53 FRAME:PICTURE

A. Criminal:Crime
B. Nail:Hammer
C. River:Forest
D. Binding:Book

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Q.54 **If it is possible to make only one meaningful English word from the second, the fifth, the seventh, and the eighth letters of the word BRILLIANT using each letter only once, the second letter of that word is your answer. If more than one such word can be formed, your answer is X. If no such word can be formed, your answer is Y.**

A. L
B. X
C. R
D. Y

Q.55 **A city can not exist without?**

A. Residents
B. Shops
C. Shopping Malls
D. Grounds

Q.56 **As attractive is to beauty so, hope is to**

A. Faith
B. Politely
C. Talk
D. Happiness

Q.57 **Which of the following sets are null sets?**

A. { }
B. ϕ
C. Both A and B
D. $\{\phi\}$

Q.58 **What should come next to it School**

A. Bag
B. Pencil
C. Shoes
D. Student

Q.59 **An analogue clock always has**

A. Alarm
B. Sound
C. Needles
D. Numbers

Q.60 **Paw : Cat :: Hoof : ?**

A. Lamb
B. Horse
C. Elephant
D. Tiger

ANSWER KEY

1	D	11	A	21	B	31	C	41	A	51	C
2	C	12	D	22	C	32	B	42	C	52	C
3	B	13	C	23	A	33	C	43	A	53	D
4	B	14	D	24	B	34	C	44	A	54	D
5	A	15	C	25	C	35	A	45	D	55	A
6	C	16	B	26	B	36	D	46	D	56	A
7	A	17	C	27	C	37	A	47	A	57	C
8	C	18	B	28	A	38	A	48	B	58	D
9	A	19	D	29	C	39	B	49	D	59	C
10	B	20	D	30	B	40	C	50	B	60	B

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FINAL INSTRUCTIONS FOR ENTRY TEST

Before Test

- Set out your test kit the night before (as mentioned in the form).
- Get a peaceful adequate sleep so that you are well rested, alert and fresh the next day.
- Bring an accurate watch.
- Allow plenty of time for getting to the test site.
- Feel relaxed and comfortable in your seat.
- Do not be over confident or nervous about your preparation a night before.

During The Test

- Entry Test is test of your:
- Knowledge
- Concepts
- Speed
- Analytical Ability
- I.Q
- Confidence
- Nerves
- As competition is at its mount, you should be perfect in all above aspects.
- Listen to the **instructions** of examiner with all ears and act accordingly.

Steps To Solve a Single Question

- **Read the question** with all option carefully and thoroughly as if you were chewing it concentrating on each and every word, identifying a key word and key concepts.
- **Think**: After reading a question, think for a few seconds about what is asked in the question.
- **Solve** the question wherever necessary
- **Justify** your answer.

General Instructions Regarding Paper Attempt

- First answer all the **easy questions;** then gradually tackle the hard ones.
- **Pace yourself.** Don't work so fast that you start making careless errors. On the other hand, don't get bogged down on any one question.
- **Do not** waste time **in any case.**
- **Play the percentages:** guess whenever you can eliminate one or more of the answers.
- Make **educated guesses,** not random ones. (As a rule, don't mark down answers when you haven't even looked at the questions) But…

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Final Instructions

KIPS PREPARATIONS

- Watch out for **eye catchers** answer choices that are designed for you to tempt wrong.
- **Change answers** only if you have a reason for doing so; don't change them on a last minute hunch or whim.
- Check your assumptions. Make sure you are answering the question asked and not the one you thought was going to be asked.
- **Encircle** questions you want to return to.
- Be careful not to make any **stray marks** on your answer sheet. The test is graded by a machine and a machine cannot tell the difference between an accidental mark and a filled in answer.
- Check frequently to make sure you are answering the questions in the **right spot** (column or box or circle or rectangle).
- If there are **two choice,** answer the one that is better and more logical.
- In case there is some misprinting leading to no choice, inform the authorities immediately and don't stay quiet. Then answer the question according to **order of the day.**
- Keep **control on your nerves.**
- **Trust yourself** and your knowledge completely. Consider yourself to be the **most intelligent** student of the hall.
- **Never trust anyone** even your best friend. Avoid cheating.
- **Be vigilant** and not casual in any case.
- **Do not relax,** as there is no remedy afterwards.
- **"Do not take the paper easy. It is a two and a half hour game which will decide the fate of your many years struggle and eventually your future."**
- **Transfer** the things well on paper.
- There should be no mistakes due to lack of concentration (Surma).
- Remember that you don't have to answer every question to do well.
- Always pray to God for help.

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KIPS 2022 Books are same as KIPS 2021. → But In KIPS 2022 Books, KIPS added PMC last year MCQs in a single Book.

* Special THANKS to KIPS teachers for sharing this book

(MUZZAMIL)

Price. 4500 + 1300 (New PMC Book) = 5800/-.

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PMC PRACTICE TEST – 1

Total MCQs: 210

BIOLOGY

Max. Marks: 210

Q.1 Parthenocarpy is induced by:
A. Gibberellins
B. Auxins
C. Cytokinins
D. Abscisic acid

Q.2 What is the resolution power of a compound microscope?
A. 2 micrometer
B. 24 micrometer
C. 2-4A
D. 24A

Q.3 A chemical component that is not found in all viruses is:
A. Protein
B. DNA
C. RNA
D. Reverse transcriptase

Q.4 Which of the following is not a component of HIV?
A. RNA
B. Grana
C. Protein
D. Intergrana

Q.5 Chlorophylls are found embedded in the _____ membranes.
A. Stroma
B. Grana
C. Thylakoid
D. Intergrana

Q.6 Of the following which one is not included in Protostomes?
A. Arthropods
B. Hemichordates
C. Annelids
D. Molluscs

Q.7 All of the following about reflex action are true except:
A. It is voluntary
B. It is found in higher animals
C. It is involuntary
D. All of these

Q.8 Mating with non-relatives is known as:
A. Inbreeding
B. Outbreeding
C. Breeding
D. None of these

Q.9 Vascular cambium initially appears as actively dividing cells between:
A. Primary xylem and secondary xylem
B. Primary xylem and secondary phloem
C. Secondary xylem and secondary phloem
D. Primary xylem and primary phloem

Q.10 In competitive inhibition, a thing that binds to enzyme active site is:
A. Substrate
B. Catalyst
C. Inhibitors
D. Both A and B

Q.11 ABO blood group system was discovered in:
A. 1811
B. 1911
C. 1801
D. 1901

Q.12 Which of the following is a chemical link between catabolism and anabolism?
A. AMP
B. ADP
C. ATP
D. All of these

Q.13 Which of the following bacteria do not commonly have flagella?
A. Cocci
B. Bacilli
C. Streptobacillus
D. Vibrio

Q.14 The shape of gray matter is:
A. Spherical
B. Mosquito
C. Butterfly
D. Rectangular

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Q.15 The numbers of spermatids produced from one primary spermatocyte are?
A. 1
B. 3
C. 2
D. 4

Q.16 Lymph nodes may be located in the human body in the tissues of:
A. Stomach
B. Brain
C. Thyroid gland
D. Groin and neck

Q.17 Which structure of protein gives information about the folding of a protein?
A. Primary structure
B. Tertiary structure
C. Secondary structure
D. Quaternary structure

Q.18 How many thin filaments are arrayed around each thick filament within a sarcomere?
A. 2
B. 4
C. 6
D. 8

Q.19 A certain type of plant is only tall when it has a heterozygous genotype. If two heterozygous plants are crossed, what is the probability of their offspring will also be tall?
A. 25%
B. 1
C. 50%
D. 75%

Q.20 Chlorophylls mainly absorbe light of which wavelength?
A. Orange blue
B. Violet red
C. Yellow orange
D. Orange red

Q.21 In nostrils, the substance which moistens and keep the incoming air warm is called:
A. Bronchi
B. Mucous
C. Pharynx
D. Glottis

Q.22 Biorhythms are also called?
A. Diurnal tempo
B. Diurnal rhythms
C. Diurnal time
D. All of these

Q.23 Robert Koch discovered bacteria that cause:
A. Tuberculosis and Typhoid
B. Tuberculosis and Cholera
C. Tuberculosis and Measles
D. All of Above

Q.24 A metal cofactor which is used in synthesis of glycolysis is:
A. Fe+
B. Co^{+2}
C. Mn^{+2}
D. Mg+2

Q.25 What is an example of an oviparous mammal?
A. Penguin
B. Spiny anteater
C. Shark
D. Elephant

Q.26 Which of the following would not be observed in a bacterial cell?
A. DNA
B. Golgi apparatus
C. Cell membrane
D. Ribosomes

Q.27 The total kinetic energy of water molecules is known as:
A. Water potential
B. Pressure potential
C. Osmotic potential
D. None of these

Q.28 Feedback inhibition in most metabolic pathways involves which type of enzymes?
A. Holoenzymes
B. Allosteric enzymes
C. Coenzymes
D. Apoenzyme

Q.29 Fluid is secreted by how many three sets of glands which combine with the sperm to form:
A. Interstitial find
B. Amniotic fluid
C. Semen
D. Both A & B

Q.30 **Which of the following does NOT occur during skeletal muscle contraction?**
A. ATP is hydrolyzed
B. Both A & B
C. Calcium binds to myosin heads
D. None of these

Q.31 **Which of the following is an example of a tetrapod?**
A. Flesh fly
B. Tarantula
C. Blue-ringed octopus
D. Hummingbird

Q.32 **Which of the following statements explains why viruses are only able to multiply in living cells?**
A. Their binary fission is controlled by host cell genes
B. Virus do not possess the necessary components for self-replication
C. DNA is only able to replicate inside living cells
D. They have only enough genetic information for DNA replication

Q.33 **If two species have similar proteins and genes it means:**
A. They have same organs.
B. They have similar appearance
C. They have common ancestors
D. All of above

Q.34 **How many compounds of tar of tobacco smoke are included in causing cancer?**
A. 2
B. 8
C. 5
D. More than 10

Q.35 **Cooperation of the two photosystems of the chloroplast is required for_____.**
A. ATP synthesis
B. Reduction of NADP
C. Cyclic photophosphorylation
D. Oxidation of the reaction center of photosystem I

Q.36 **Which of the following is a mesh of interconnected membranes involved in protein synthesis and transport?**
A. ER
B. Cytoskeleton
C. Golgi apparatus
D. All of these

Q.37 **Which of the following is inherited via an autosomal recessive allele?**
A. Hemophilia
B. Huntington's disease
C. Color-blindness
D. Cystic fibrosis

Q.38 **The total aggregate of genes in a population at any one time is called:**
A. Genome
B. Genetic group
C. Gene pool
D. Cystic fibrosis

Q.39 **The spinal cord is divided into how many different regions?**
A. 2
B. 6
C. 4
D. 8

Q.40 **Cyanobacteria have which of the following type of cell wall?**
A. Gram positive
B. Gram negative
C. Cellulose
D. Acid fast

Q.41 **In mammals that are seasonal breeders, females are receptive only once a year. This is known as:**
A. Follicular cycle
B. Luteal cycle
C. Estrous cycle
D. Menstrual cycle

Q.42 **What type of the phage is a T_2 Phage?**
A. ssDNA Phage
B. dsDNA phage
C. ssRNA Phage
D. ds RNA Phage

Q.43 **The centers for thermoregulation and osmergulation are present in:**
A. Thalamus
B. Hypothalamus
C. Amygdala
D. Cerebellum

Q.44 Which of the following step occurs immediately after binding of Ca^{2+} with troponin molecule during muscle contraction?

A. Binding sites of actin get attached to the myosin head
B. Troponin uncovers the actin binding sites
C. Ca^{2+} goes back inside sarcoplasmic reticulum
D. Tropomyosin gets removed from the binding sites of actin filaments

Q.45 How are photosynthetic pigments organized?

A. Cluster
B. Stacks
C. Photosystems
D. Both A & C

Q.46 The process through which animal take oxygen (O_2) from the air and release carbon dioxide (CO_2) into the air is called:

A. Breathing
B. Diffusion
C. Respiration
D. Osmosis

Q.47 The genetically engineered vaccine is not available for which of the following?

A. HAV
B. HCV
C. HBV
D. HDV

Q.48 The bacteriophage incorporates in the viral genome in which phase:

A. Lysogenic cycle
B. Lytic cycle
C. Both A & B
D. None of these

Q.49 The most important function of the cytoplasm is to acts as a:

A. Activity site
B. Wastes
C. Storehouse
D. None of these

Q.50 Which two proteins are the major components of myofibrils, allowing for muscle fibre contraction?

A. Myosin and cartilage
B. Actin and myosin
C. Lamellae and actin
D. Only myosin

Q.51 Conversion of ss RNA to ds DNA mediated by:

A. DNA dependent DNA polymerase
B. RNA dependent DNA polymerase
C. DNA dependent RNA polymerase
D. RNA dependent RNA polymerase

Q.52 The flap like structure found in larynx is called:

A. Glottis
B. Larynx
C. Epiglottis
D. Vocal cord

Q.53 Which of the following statements explains why viruses are only able to multiply in living cells?

A. Their binary fission is controlled by host cell genes
B. Virus do not possess the necessary components for self-replication
C. DNA is only able to replicate inside living cells
D. They have only enough genetic information for DNA replication

Q.54 Pigeon, platypus and panda are all representatives of which of the following?

A. Homoeothermic
B. Poikilothermic
C. Hyperthermia
D. None of these

Q.55 A research has designed a new type of inhibitor that binds at the active site:

A. Uncompetitive inhibition
B. Competitive inhibition
C. Noncompetitive inhibition
D. All of these

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Q.56 **A sample of RNA is sequenced and found to contain 22% adenine. Which of the following conclusions can also be drawn about the sample?**
A. 22% uracil
B. 22%thymine
C. 22% cytosine
D. 22% guanine

Q.57 **Which molecule passes the mitochondrial membrane to begin the Krebs cycle?**
A. ATP
B. NADH
C. ADP
D. Acetyl coA

Q.58 **Example of convergent evolution is:**
A. Forelimbs of man and bat
B. Wings of birds and insects
C. Darwin's finches
D. All

Q.59 **The two domains to which prokaryotes are classified?**
A. Bacteria and Protista
B. Eukarya and Monera
C. Archaea and Eukarya
D. Eubacteria and Archaea

Q.60 **Which is the correct order of energy transfer from accessory pigments to main photosynthetic pigment?**
A. Carotenoids, Chlorophyll a, Chlorophyll b
B. Chlorophyll b, Carotenoids, Chlorophyll a
C. Carotenoids, Chlorophyll b, Chlorophyll a
D. Chlorophyll a, Chlorophyll b, Carotenoids

Q.61 **All of the following statements are correct except:**
A. The testicles produce millions of sperm.
B. Hormones are produced by the testicles.
C. Semen is produced in the seminal vesicles
D. All males are born with one testicle

Q.62 **If the non-protein part of Enzyme is covalently bonded to the enzyme then it is known as:**
A. Coenzyme
B. Prosthetic group
C. Cofactor
D. Activator

Q.63 **Casparian strips are found in:**
A. Epidermis
B. Cortex
C. Endodermis
D. Vascular bundle

Q.64 **Which term refers to the formation of egg cells that begins in the developing ovaries of a female?**
A. Meiosis
B. Ovulation
C. Fertilization
D. Oogenesis

Q.65 **Cnidarian is characterized by which of the following?**
A. Tissue level of organization
B. Coelenteron
C. Nematoblasts
D. All of these

Q.66 **_____ is responsible for making abnormal RNA (rRNA):**
A. Nucleus only
B. Nucleus & nucleolus only
C. Nucleolus only
D. None of these

Q.67 **Which the following is not the unique features of synovial joint?**
A. Articular capsule
B. Synovial fluid
C. Articular cartilage
D. Fibrocartilage

Q.68 **How is the body plan of a lobster similar to that of a whale?**
A. Closed circulatory system
B. Mouth develops from the blastopore
C. A tubular digestive system with a mouth and an anus
D. The gut is not lined by coelomic epithelium

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Q.69 Reagent like $K_2Cr_2O_7$ and H_2SO_4 lead to____?

A. Reduction
B. Dehydration
C. Hydrolysis
D. Oxidation

Q.70 Characteristic shape of NaCl crystal is its:

A. Definite shape
B. Habit
C. Symmetry
D. All of these

Q.71 In Balancing redox equation, the first thing is to:

A. Balance out all the Reactants
B. Calculate the oxidation number
C. Write the skeleton Equation
D. Identify the elements

Q.72 The separation of components of liquid on the basis of their bolling point is called as:

A. Destructive distillation
B. Vacuum distillation
C. Fractional distillation
D. Partial distillation

Q.73 Pure metal:

A. Corrode slowly
B. Corrode rapidly
C. Does not corrode easily
D. None of these

Q.74 Manufacturing of ammonia by Haber's process is an:

A. Endothermic reaction
B. Irreversible
C. Exothermic reaction
D. Slow

Q.75 Ethanol is prepared on a large scale by:

A. Hydration of alkanes
B. Fermentation
C. Distillation of wood
D. Williamson's synthesis

Q.76 The temperature at which vapor pressure of a liquid becomes equal to external pressure or atmospheric pressure is called as:

A. Melting point
B. Freezing point
C. Boiling point
D. Sublimation point

Q.77 ΔH for exothermic reaction is ____?

A. More than 1
B. Negative
C. Positive
D. Neutral

Q.78 Which of the following group is ortho-para directing group____?

A. -COOH
B. -CN
C. -COR
D. -OH

Q.79 Each electron in an atom must have its own unique set of quantum number is a statement of___:

A. Aufbau principle
B. Hund's rule
C. Pauli exclusion principle
D. None of these

.80 The unit of electron affinity is:

A. J mol
B. Kj/atom
C. $KJ.mol^{-1}$
D. j/atom

31 Electron affinity of an atom is the energy released when an electron_____ to an empty or partially filled orbital of an atom to form____:

A. Removed cation
B. Added, anoin
C. Added. cation
D. Removed, anion

Conversion of water into steam is a:

A. Spontaneous Reactions
B. Reversible reaction
C. Exothermic Reaction
D. Combustion reaction

Q.83 **On which factor the vapors pressure of a substance does not depend?**
A. Physical state of matter
B. Surface area
C. Intermolecular forces
D. Temperature

Q.84 **Usually hydrogenation of alkenes is done by using_____ as catalyst**
A. Nickel
B. Palladium
C. Gold
D. Raney Nickel

Q.85 **Acetic acid is also named as___?**
A. Propionic acid
B. Ethanoic acid
C. Butanoic acid
D. Methanoic acid

Q.86 **Effusion is the movement of a gas through extremely small opening of molecular size int region of _____ pressure:**
A. High
B. Moderate
C. Low
D. Same

Q.87 **How many times a covalent bond is strong than H-bond:**
A. 10
B. 20
C. 12
D. 2

Q.88 **Kc and Kp have the same value when reactants and products have same number of:**
A. Atoms
B. Ions
C. Molecules
D. Moles

Q.89 **Production of Ammonia by Haber process is made economical by using:**
A. Law of Mass action
B. Le-Chateher's Principle
C. Catalyst
D. All of these

Q.90 **Metals are_____:**
A. Reducing agents
B. Oxidizing agents
C. Dehydrating agents
D. Both A and B

Q.91 **Which one of them is known as super cooled liquids?**
A. Glass
B. Silica
C. Diamond
D. Carbon

Q.92 **What is the color of Iodoform precipitates?**
A. White
B. Reddish
C. Black
D. Yellow

Q.93 **Which of the following does not react with bases?**
A. Carboxylic acids
B. Ethanol
C. Phenol
D. HCl

Q.94 **The probability of finding an electron between orbital is zero. This place is called ____ plane:**
A. Nodal
B. Non nodal
C. Antinodal
D. Erect

Q.95 **Chemical equations do not tell about the _____ because of certain limitations?**
A. Rate of reaction
B. Conditions
C. Pressure
D. Both A and B

Q.96 **Plasma is difficult to maintain at:**
A. Low temperature
B. Low pressure
C. High temperature
D. High pressure

Q.97 **Rate = k $[NO_2]$ the order of this reaction is:**
A. Zero
B. Three
C. Two
D. None of these

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Q.98 Electrolysis of a dilute solution of NaCl results_____ at the anode:

A. Sodium
B. Chlorine
C. Hydrogen
D. Oxygen

Q.99 Which of the following is directional bond?

A. Ionic bond
B. H-bond
C. Metallic bond
D. None of these

Q.100 The reaction in which benzene is reacted with alkyl or acyl halides in the presence of $AlCl_3$ is called as____?

A. Aldol condensation
B. Witting reaction
C. Wolf kishner reaction
D. Friedel and craft reaction

Q.101 An atom or group of atom that gives specific properties to the compound is called as ___?

A. Functional groups
B. Alkane
C. Homologous series
D. Atom

Q.102 Which of the following causes complete reduction of carboxylic acid into alkanes ___?

A. H_2/Ni
B. HI/P
C. Pd/C
D. $LiAlH_4$

Q.103 Which one is an index to metallic character:

A. Ionization Energy
B. Atomic radius
C. Electron affinity
D. Electronegativity

Q.104 $CuSO_4.5H_2O$ is an example of crystal system:

A. Triclinic
B. Cubic
C. Tetragonal
D. Rhombohedral

Q.105 OH-is added when reaction is in:

A. Acidic Medium
B. Neutral Solution
C. Basic Medium
D. All of these

Q.106 Which one of the following is an example of transition element?

A. Na
B. Ba
C. Co
D. Ra

Q.107 Symmetry is repetition of __ when a crystal rotates at 360 along its axis:

A. Faces
B. Angles
C. Edges
D. All of these

Q.108 Which one of the following is not an example of state function?

A. Temperature (T)
B. Enthalpy (E)
C. Volume (V)
D. Heat (q)

Q.109 Large hydrocarbons are converted into smaller hydrocarbons by a process called as?

A. Reforming
B. Cracking
C. Distillation
D. Decomposition

Q.110 If a graph is plotted with concentration data of a reactant in a chemical reaction has curve is:

A. Rising
B. U shaped
C. Falling
D. None of these

1 What is the value of One calorie in Joule?

A. 4.9J
B. 4.18J
C. 7.98J
D. 8.21J

.112 Octane number of 2,2,4-trimethylepentane is:

A. 100
B. 9
C. 95
D. 89

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Q.113 During reduction of aldehydes with $NaBH_4$, which of the following intermediate is formed?

A. Carbanion
B. Carbene
C. Carbocation
D. Alkoxide ion

Q.114 Carboxylase are example of which type of enzyme:

A. Hydrolases
B. Transferases
C. Lyases
D. Ligases

Q.115 Gypsum is applied to the soil as a source of:

A. Ca and P
B. Ca and S
C. S and P
D. We could not apply

Q.116 The __ study of composition of pure substance in 17th century clearly shows that few elements are components of many substance:

A. Qualitative
B. Quantitative
C. Extensive
D. Both A & B

Q.117 Which of the following catalyst is used in the industrial preparation of methanol?

A. Zinc oxide and alumina
B. Silica and Chromium Oxide
C. Alumina and silica
D. Zinc oxide and Chromium oxide

Q.118 The ionic radius of an ion is the radius of the ion while considering it to be ____ in shape:

A. Oval
B. Rectangular
C. Round
D. Spherical

Q.119 Half-life period for a first order reaction is independent of:

A. Conditions of temperature
B. Presence of Catalyst
C. Initial Concentration of the compound
D. All of these

Q.120 The total number of transition elements are?

A. 48
B. 58
C. 32
D. 28

Q.121 The lobes of d-orbitals be between the axis.

A. First two
B. In all axis
C. First three
D. None of these

Q.122 Formation of $ZnSO_4$ from blue copper sulphate solution is a spontaneous:

A. Oxidation reactions
B. Reduction Reaction
C. Addition Reaction
D. Redox reaction

Q.123 Electrolysis is a:

A. Spontaneous Reactions
B. Reduction Reaction
C. Oxidation-reduction reaction
D. Oxidation Reaction

Q.124 Which of the following shows H-bonding?

A. CH_3CH_2OH
B. CH_2CH_2Cl
C. CH_3-O-CH_2
D. All of these

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Q.125 Volts / Ampere = ____:
A. Ohm
B. Pascal
C. Ohm meter
D. None of them

Q.126 Decrease in velocity per unit time is called:
A. Acceleration
B. Deceleration
C. Positive acceleration
D. Uniform acceleration

Q.127 For ideal step-up transformer P_s ___ P_p.
A. Equal to
B. Less than
C. Greater than
D. None of these

Q.128 Ohm's law is not valid for:
A. Semiconductors
B. Filament bulb
C. Copper
D. Both A and B

Q.129 Time constant is defined as the time required by the capacitor:
A. To deposit 63% of the equilibrium charge
B. To deposit 36% of the equilibrium charge
C. To deposit 63 times of the equilibrium charge
D. To deposit 36 times of the equilibrium charge

Q.130 Work done will be maximum if the angle between the force F and displacement d is
A. 45°
B. 90°
C. 180°
D. 0°

Q.131 The ___ reactions is an example of source of energy:
A. Fission
B. Both A & C
C. Fusion
D. None of these

Q.132 Which light has more velocity?
A. He-Ne laser
B. Yellow
C. White
D. All are equal

Q.133 The unit of electric field strength is ____:
A. V/C
B. N/V
C. N/C
D. N/m

Q.134 Under which conditions, a real gas approximate to an ideal gas?
A. High pressure and low temperature
B. High pressure and high temperature
C. Low pressure and high temperature
D. Low pressure and low temperature

Q.135 Half-life of a radiation active element is that period in which half of the atoms?
A. Diffuse
B. Disturbed
C. Decompose
D. Decay

136 A constant force $\vec{F} = 2\hat{i} + 3\hat{j} + 4\hat{k}$ is applied on a body what will be the work done to move a body 5m in z-direction?
A. 0
B. 45 J
C. 10J
D. 20 J

Q.137 7 radians is equal to ____ degree approximately:
A. 300
B. 500
C. 400
D. None of these

138 Which of the following is not a unit of angular displacement?
A. degree
B. meters
C. revolution
D. radians

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Q.139 **The K.E. of a body mass 2kg and momentum of 2Ns is:**
A. 1J
B. 3J
C. 2J
D. 4J

Q.140 **Which of this is constant in adiabatic process?**
A. Total heat
B. Temperature
C. Work done
D. Both A & B

Q.141 **If the peak voltage is 9V, evaluate the peak-to-peak voltage:**
A. 9V
B. 4.5V
C. 18V
D. 0V

Q.142 **You have three capacitors, each of 2μF. Which of the following combination of the three capacitors, the resultant capacitance is 3μF?**
A. All three capacitors in series
B. Two capacitors are in parallel, one in series
C. Two capacitors are in series, one in parallel
D. All three capacitors in parallel

Q.143 **Half wave rectifier passes only:**
A. Lower half cycle
B. Half cycle
C. Upper half cycle
D. None of them

Q.144 **Which one of the following bulbs has the least resistance?**
A. 100W
B. 300W
C. 200W
D. 60W

Q.145 **Terminal potential difference of a cell:**
A. Increases with increase in its internal resistance
B. Decrease with increase in internal resistance
C. Is independent of it internal resistance
D. None of these

Q.146 **In a conductor, if 6-coulomb charge flow for 2 seconds. The value of electric current will be:**
A. 3 ampere
B. 2 ampere
C. 3 volts
D. 2 volts

Q.147 **Farad is defined as:**
A. newton / volt
B. coulomb / joule
C. coulomb / volt
D. coulomb / newton

Q.148 **220V; 50Hz AC supply is concocted across a resistor of 50k ohms. The current at a t seconds assuming that it is zero at t = 0, is:**
A. 4.4 sin(314t) mA
B. 6.2 sin(314t) mA
C. 4.4 sin(157t) mA
D. 6.2 sin(157t) A

Q.149 **What is the angular frequency during the circular motion?**
A. qm/B
B. qB/m
C. m/qB
D. qmB

Q.150 **A circular loop of radius 3 m placed having area in the direction of magnetic field of 100T, flux will be:**
A. 1296 Wb
B. 1190 Wb
C. 12.96 Wb
D. 2826 Wb

Q.151 **The energy stored in parallel plate capacitor is 24J. What is the potential difference between the plates if the capacitance of the capacitor is 3μF?**
A. 4 kV
B. 54 kV
C. 16 kV
D. 8 kV

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Q.152 In which of the following process the heat is neither absorbed nor released by a system?

A. Isochoric
B. Adiabatic
C. Isothermal
D. Isobaric

Q.153 4000 coulomb charges were passing from the wire for about 12 seconds estimated the current during the process?

A. 333.3 ampere
B. 666.67 ampere
C. 333.33 volts
D. None of them

Q.154 Power transfer from primary to secondary is through flux linkage, so the primary and secondary coils should be wound in such a way that flux coupling between them is:

A. Minimum
B. Zero
C. Constant
D. Maximum

Q.155 Is it possible to visualize magnetic field lines?

A. Yes directly we can see with eyes
B. We need telescope
C. We need microscope
D. All cases are not possible

Q.156 When a stone is thrown horizontally with 2m/s from a building of height 5m then just before hitting ground its acceleration is:

A. 12 m/s^2
B. 9.8 m/s^2
C. 13 m/s^2
D. 7.6 m/s^2

Q.157 The ratio of angular speed of the minute hand of clock to that of its hour's hand is:

A. 3600:1
B. 24:1
C. 6:1
D. 12:1

Q.158 Sample of radioactive elements with initial mass of 24 g decayed to 3 g is 36 minutes. How much of original sample remained after the first 12 minute?

A. 12 g
B. 2 g
C. 6 g
D. 8 g

Q.159 Ratio of fundamental frequency of Open Organ pipe to closed organ pipe is

A. 1 : 2
B. 2 : 1
C. 1 : 4
D. 4 : 1

Q.160 A 200-watt bulb operates in a 220V circuit. Find the current:

A. 0.9 A
B. 2 A
C. 0.6 A
D. 3 A

Q.161 A beetle crawls 2 cm/minute for ten minutes. How far did it crawl?

A. 8 centimeters
B. 20 centimeters
C. 5 centimeters
D. 0.20 centimeters

Q.162 Force bear by wall on which water strike normally at speed of 10 m sec^{-1} and at a discharge .0001 m^3/sec is

A. 1 N
B. 100 N
C. 10 N
D. 1000 N

53 1MWh is equal to _____ joule.

A. 3.6×10^{10}
B. 3.6×10^{6}
C. 3.6×10^{9}
D. 3.6

Q.164 A particle is performing uniform circular motion along a circular path of radius r, with a uniform speed v. Its tangential and radial acceleration are

A. Zero and infinite
B. Zero and $\frac{v^2}{r}$
C. $\frac{v^2}{r}$ and zero
D. $r\omega^2$ and infinite

Q.165 The speed of sound waves having a frequency of 256 Hz, compared with the speed of sound waves having a frequency of 512Hz is

A. Half as great
B. Four times as great
C. Twice as great
D. Same

Q.166 In a certain process, 400J of heat energy is supplied to a system and at the same time 150 J of work is done by the system. What is the increase in internal energy of the system?

A.250 J
B. 100 J
C. 50 J
D. 150 J

Q.167 The work done in placing a charge of 8 micro coulombs on a capacitor of capacity 100 nF is_____

A. 16×10^{-5} J
B. 32×10^{-6} J
C. 3.2×10^{-4} J
D. 16×10^{-4}J

Q.168 The temperature coefficient of resistance of a wire is 0.00125 per °C. At 300 K, its resistance is 1 Ω. The resistance of the wire will be 2 Ω at

A. 1154 K
B. 1100 K
C. 1400 K
D. 1127 K

Q.169 What happens to the flux if applied magnetic field is doubled on the same surface?

A. Becomes half
B. Becomes twice
C. Becomes infinite
D. Becomes 4 times

Q.170 Which has less ripple factor?

A. Half wave rectifier
B. Full wave rectifier
C. Both
D. None

Q.171 Hydrogen atom excites energy level from fundamental state to n = 3. Number of spectral lines according to Bohr, is

A. 4
B. 3
C. 1
D. 2

Q.172 Number of down quark in Proton

A. 1
B. 2
C. 3
D. 4

Q.173 Find De-Broglie wave wavelength if mass of 150g and velocity is 50m/s?

A. 3.1×10^{-38} m
B. 8.81×10^{-33} m
C. 4.41×10^{-34} m
D. 0.884×10^{-34} m

Q.174 Momentum of a photon is

A. 0
B. α
C. hf/c
D. mv

Q.175 The efficiency of full wave rectifier?

A. 40.6 %
B. 10.6 %
C. 81.2 %
D. 0.84%

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Q.176 A.C generator is similar to

A. Transformer
B. Capacitor
C. Inductor
D. None

Q.177 If the direction of current is upward pointed by thumb, magnetic field is north side, then force will be

A. left
B. right
C. top
D. bottom

Q.178 Charge on photon is:

A. 0
B. Negative
C. Positive
D. Positive / negative

Q.179 As the wavelength of light used increases, the distance between bright fringes in the interference pattern:

A. Increases
B. Remains same
C. Decreases
D. None of these

Q.180 If a squash ball comes back to its starting point after bouncing off the wall several times, then:

A. Its total displacement is zero but its average velocity is non-zero
B. Its total displacement is non-zero but its average velocity is zero
C. Both its total displacement and its average velocity is non-zero
D. Its total displacement is zero and its average velocity is zero

ENGLISH

Q.181 My Father ___ In 1956:

A. died
B. had died
C. dies
D. has died

Q.182 I bought _____new TV set yesterday.

A. a
B. the
C. an
D. no article

Q.183 You must had(A)/a kind and gentle heart (B. if you want (C) / to become a successful doctor (D):

A. You must had
B. if you want
C. a kind and gentle heart
D. to become a successful doctor

Q.184 Don't forget your ____. It's very cold outside, you wouldn't want to Catch a cold.

A. gloves
B. umbrella
C. underwear
D. scissors

Q.185 No, my family ____ live nearby.

A. does not
B. do not
C. do
D. did

186 Rainfall in the desert is not only extremely low, but also extremely:

A. Intense
B. meagre
C. erratic
D. undesirable

187 Last Saturday my father ____ (take) my friends and me to the circus.

A. take
B. will take
C. took
D. has taken

.188 Choose the correct spelling of the word:

A. irresistable
B. iresistible
C. irrisistible
D. irresistible

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Q.189 By the next month, we shall ____(have) the project:

A. have
B. has
C. have had
D. having

Q.190 Apart from cows, buffaloes are also _____ for milk production.

A. reared
B. developed
C. grown
D. produced

Q.191 Chose the correct spelling of the word:

A. probaly
B. probebly
C. probably
D. probly

Q.192 There ___ many objections to the plan.

A. is
B. was
C. are
D. be

Q.193 What are you doing here?

A. Declarative
B. Interrogative
C. Imperative
D. Exclamatory

Q.194 The peon will not ___ the bell yet.

A. has rung
B. have rung
C. had rung
D. rings

Q.195 Choose the correct spelling of the word:

A. adress
B. addres
C. address
D. adrress

Q.196 What do you usually have for ___ breakfast?

A. a
B. the
C. an
D. no article

Q.197 Choose the correct sentence.

A. Drinks on the menu included the following, hot chocolate, iced tea and lemonade.
C. Drinks on the menu included the following hot chocolate, iced tea and lemonade.
B. Drinks on the menu included the following: hot chocolate, iced tea and lemonade.
D. Drinks on the menu included the following; hot chocolate, iced tea and lemonade.

Q.198 This summer our vacation should be both exciting and restful:

A. coemplex
B. compound
C. simple
D. compound-complex

Q.199 As he hated every minute of his life in the army, it is no wonder that he decided one day to ____ his unit:

A. desert
B. avoid
C. dessert
D. suspend

Q.200 Sara___(unlock) the door and ____(go) into her apartment.

A. unlocking…going
B. unlocked…gone
C. unlocked…went
D. unlocks…is going

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LOGICAL REASONING

Q.201 What is the common vowel in Apple and Banana?

A. E
B. A
C. P
D. M

Q.202 Statements:

I. The life today is too fast, demanding and full of variety in all aspects which at times leads to stressful situations.

II. Number of suicide cases among teenagers is on increase.

A. Statement I is the cause and statement II is its effect
B. Both the statements I and II are independent causes
C. Statement II is the cause and statement I is its effect
D. Both the statements I and II are effects of independents causes

Q.203 Look at this series: 53, 53, 40, 40, 27, 27, ... What number should come next?

A. 12
B. 27
C. 14
D. 53

Q.204 In the following letter series, some of the letters are missing, which are given in that order as one of the alternatives below it. Choose the corrects:

bc__b__c__b __ccb

A. cbcb
B. cbbc
C. bbcb
D. bcbc

Q.205 Following is the Largest organ is human body:

A. Skin
B. Large intestine
C. Liver
D. Both A & B

Q.206 Statements:

The availability of imported fruits has increased in the indigenous market and so the demand for indigenous fruits has been decreased.

Course of Action:

I. To help the indigenous producers of fruits the government should impose high import duty on these fruits, even if these are not of good quality.

II. The fruit vendors should stop selling imported fruits. So that the demeaned for indigenous fruits would be increased:

A. Both of them follows
B. Only I follows
C. None of them follows
D. Only II follows

Q.207 Measure is to caliper as direction is to:

A. Speed
B. Needle
C. Hiking
D. Compass

Q.208 Complete the series A2, B4, C8, D16, E?

A. 32
B. 34
C. 36
D. 38

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ANSWER KEY

1	B	26	B	51	B	76	C	101	A	126	B	151	A	176	D	201	B
2	A	27	A	52	D	77	B	102	B	127	A	152	B	177	A	202	A
3	C	28	B	53	B	78	D	103	A	128	D	153	A	178	A	203	C
4	B	29	C	54	A	79	C	104	A	129	A	154	D	179	A	204	A
5	C	30	C	55	B	80	C	105	C	130	D	155	D	180	D	205	A
6	B	31	D	56	A	81	B	106	C	131	B	156	B	181	A	206	C
7	A	32	B	57	D	82	A	107	D	132	D	157	D	182	A	207	D
8	B	33	C	58	B	83	B	108	D	133	C	158	A	183	A	208	A
9	D	34	D	59	D	84	D	109	B	134	C	159	B	184	B		
10	C	35	B	60	C	85	B	110	C	135	D	160	A	185	A		
11	D	36	A	61	D	86	C	111	B	136	D	161	B	186	C		
12	C	37	D	62	B	87	B	112	A	137	C	162	A	187	C		
13	A	38	C	63	C	88	D	113	D	138	B	163	C	188	D		
14	C	39	C	64	D	89	D	114	D	139	A	164	B	189	C		
15	D	40	B	65	D	90	A	115	B	140	A	165	D	190	A		
16	D	41	C	66	C	91	A	116	B	141	C	166	A	191	C		
17	B	42	B	67	D	92	D	117	D	142	C	167	C	192	C		
18	C	43	B	68	C	93	B	118	D	143	B	168	B	193	B		
19	D	44	D	69	D	94	A	119	D	144	B	169	B	194	B		
20	B	45	D	70	D	95	D	120	B	145	B	170	B	195	C		
21	B	46	A	71	C	96	A	121	C	146	A	171	B	196	D		
22	B	47	B	72	C	97	D	122	D	147	C	172	A	197	B		
23	B	48	A	73	C	98	D	123	C	148	B	173	D	198	C		
24	D	49	A	74	C	99	B	124	A	149	B	174	C	199	A		
25	D	50	B	75	B	100	D	125	A	150	D	175	C	200	C		

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PMC PRACTICE TEST – 2

Total MCQs: 210 Max. Marks: 210

BIOLOGY

Q.1 In all plants the major sites of photosynthesis are:
A. Leaf
B. Stems
C. Roots
D. Branches

Q.2 The set of all genes in any population is termed as:
A. Population pool
B. Specie pool
C. Gene pool
D. All of these

Q.3 Asymmetrical body is a facture of phylum_____.
A. Annelida
B. Arthropoda
C. Porifera
D. Cnidaria

Q.4 A condition with abnormal amounts of lipid is called:
A. Anorexia
B. Botulism
C. Piles
D. Obesity

Q.5 Evaporation of water from aerial parts of plants is called:
A. Ascent of sap
B. Plasmolysis
C. Deplasmolysis
D. None of these

Q.6 The uterus of the female reproductive system opens into the?
A. Placenta
B. Birth canal
C. Cervix
D. All of these

Q.7 The thalamus and the hypothalamus are located in which region of the brain.
A. Brain stem
B. Cerebrum
C. Cerebellum
D. Diencephalon

Q.8 Which of the following structure provide pathogenicity to the bacteria?
A. Akinetes
B. Cell wall
C. Call membrane
D. Capsule

Q.9 Electrons from NADH accepted by oxygen forms how many ATPs.
A. 2
B. 3
C. 4
D. 1

Q.10 Synaptic vesicles discharge which of the following chemical at the neuromuscular junction:
A. Acetylcholine
B. Adrenaline
C. Estradiol
D. Testosterone

Q.11 Photosystems are located in_____.
A. Stromal
B. Chloroplast
C. Thylakoid membrane
D. The intergrana

Q.12 In enzymatic mechanism, the substrate bind to enzyme active state to produce:
A. Reactants
B. Enzymes
C. Products
D. All of these

Q.13 Protein coat of a virus enclosing nucleic acid is called?
A. Vector
B. Genome
C. Plasmid
D. Genome

Q.14 What molecule would you not expect to find in a retrovirus?
A. Adenine
B. Thymine
C. Uracil
D. Guanine

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Q.15 **Urethra and vagina have_____ openings to the exterior:**
A. Common
B. Independent
C. Both A and B
D. None of these

Q.16 **When a muscle fiber shortens, the following shortens:**
A. Actin filament
B. Sarcomere
C. Both A and B
D. Myosin

Q.17 **The viral nucleocapsid made up of:**
C. Envelope and capsid
B. Capsid and spikes
D. Capsomers

Q.18 **Which part of the nervous system is responsible for controlling reflex action?**
A. Corpus callosum
B. Pons
C. Vermis
D. Spinal cord

Q.19 **Function of Smooth Endoplasmic Reticulum (SER) is:**
A. Synthesis of intracellular proteins.
B. Synthesis of lipids.
C. Synthesis of extracellular enzymes.
D. Synthesis of extracellular proteins

Q.20 **Cytochromes are electron transport intermediates containing:**
A. Myoglobin
B. Haem
C. Globulin
D. Fibrin

Q.21 **When the tobacco mosaic virus was successfully crystallized?**
A. 1935
B. 1930
C. 1932
D. 1920

Q.22 **Which of the following is false about conjugation?**
A. It forms a bridge between two bacterial cells
B. It involves transport of genetic material via vectors
C. It is a form of sexual reproduction
D. Both A and B

Q.23 **The space inside the chest cavity during inspiration is:**
A. Decreased
B. Increased
C. Remains same
D. First increased then decreased

Q.24 **The disease characterized by the breakdown of alveoli is called:**
A. Asthma
B. Tuberculosis
C. Emphysema
D. A and B

Q.25 **Polychaeta are present in:**
A. Echinodermata
B. Annelida
C. Arthropoda
D. Mollusca

Q.26 **One plant is homozygous dominant for purple flowers, and the other is homozygous recessive for white flowers. What fraction of the F2 population will have white flowers?**
A. 1/4
B. 1/2
C. 1/8
D. 1/16

Q.27 **A compound produced as a result of a chemical reaction of an alcohol with an acid in which water molecule is released is called?**
A. Monosaccharide
B. Fatty acid
C. Nucleic acid
D. Neutral lipid

Q.28 **The enzyme which plays important role in HIV pathogenesis:**
A. RNA polymerase I
B. DNA polymerase II
C. Reverse Transcriptase I
D. Reverse Transcriptase

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Q.29 A monohybrid cross-yielded 3:1 in F2. What could be mode of inheritance?

A. Segregation
B. Independent assortment
C. Both A and B
D. None of these

Q.30 Which of the following are not amniotes?

A. Mammals and birds
B. Birds and reptiles
C. Reptiles and amphibians
D. Amphibians and fishes

Q.31 Calcium during muscle contraction binds with:

A. Tropomyosin
B. Troponin C
C. Troponin I
D. Troponin T

Q.32 Lymphocytes are found in:

A. Lymph capillary
B. Lymph vessel
C. Lymph trunk
D. Lymph node

Q.33 The presence of peptidoglycan in Gram positive bacteria is:

A. 40% of dry weight
B. 50% of dry weight
C. 10% of dry weigh
D. 80% of dry weight

Q.34 If the non-protein part of enzyme is covalently bonded to the enzyme, it is known as:

A. Coenzyme
B. Activator
C. Cofactor
D. Prosthetic group

Q.35 In which stage of photosynthesis, ATP and NADPH are converted to ADP + Pi and NADP+?

A. Light dependent reaction
B. Light independent reaction
C. Both of these
D. None of above

Q.36 What is the copper containing protein involved in the ETC in plants?

A. Pq
B. Pc
C. Pt
D. Po

Q.37 Disorders caused due to disturbance in nerve impulse generation and transmission is called?

A. Nerve impulse disorder
B. Nervous disorder
C. Transmission disorder
D. Functional disorder

Q.38 Phagocytosis, autophagy and extracellular digestion are the functions of:

A. Lysosomes
B. Mitochondria
C. Golgi apparatus
D. All of these

Q.39 In which condition, brain produced more impulses than normal:

A. Epilepsy
B. Alzheimer's disease
C. Parkinson's disease
D. Lou Gehrig's disease

Q.40 Which of the following is true of both bacterial conjugation and meiosis?

A. Both processes produce four haploid cells
B. Both processes are a form of asexual reproduction
C. Both processes involve genetic recombination
D. None of these

Q.41 The period during which a girl sexually matures is called:

A. Menstrual cycle
B. Puberty
C. Childhood
D. Teens

Q.42 Antibodies play important role against microorganisms and other pathogens to which type of proteins do they belong?

A. Globular
B. Functional
C. Fibrous
D. Both A and B

Q43 **The animals in which there are separate male and female individuals are called:**
A. Unisexual
B. Bisexual
C. Asexual
D. Hermaphrodite

Q44 **The synthesis of ATP in the presence of oxygen is called:**
A. Respiration
B. Calvin cycle
C. Oxidative phosphorylation
D. Chemiosmosis

Q45 **The electrons from Ferridoxin (Fd) to $NADP^+$ are transferred by which enzyme?**
A. NADP Oxidase
B. NADP reductase
C. ATP synthase
D. Both A and B s

Q46 The path of electrons through the two photosystems is called:
A. S scheme
B. X scheme
C. Z scene
D. Y Scheme

Q47 **The T-lymphocytes and B-lymphocytes are the major cells of the:**
A. Thymus
B. Lymph nodes
C. Adrenal glands
D. Lymphatic vessels

Q48 **Largest invertebrate is:**
A. Squid
B. Octopus
C. Sycon
D. Jelly fish.

Q49 **In reproduction semen refers to which of the following:**
A. Fluid and sperms
B. Blood and water
C. Blood and sperms
D. Blood and fluid

Q50 **Which molecule passes the mitochondrial membrane to begin the Krebs cycle?**
A. ATP
B. Acetyl CoA
C. NADH
D. ADP

Q51 **A surfactant plays its role by:**
A. No effect on surface tension
B. Increasing surface tension
C. Decreasing surface tension
D. None of these

Q52 **The patellar reflex and the Achilles reflex are examples of:**
A. Monosynaptic reflex
B. Blood and water
C. Hemi Synaptic reflex
D. Blood and fluid

Q53 **What is the size of Parvovirus?**
A. 200nm
B. 30nm
C. 20nm
D. 100nm

Q54 **Structures that were once functional in the past but no longer serve a purpose due to evolutionary adaptations and physiological changes are referred to as?**
A. Vestigial
B. Analogous structures
C. Homologous structures
D. None of these

Q55 **Complete breakdown of glucose molecule take place in which of the following:**
A. Alcoholic fermentation
B. Lactic acid fermentation
C. Anaerobic respiration
D. None of these

Q56 **Joints in which both muscle and bone are in same phase angle:**
A. Ball and socket
B. Fibrous
C. Cartilaginous
D. Hinge joint

Q57 **Gout results due to defective metabolism of:**
A. Xanthine dehydrogenase
B. Xanthine carboxylase
C. Xanthine hydrogenase
D. Xanthine oxidase

Q.58 Which of the following is incorrect for ascent of sap?

A. Water potential
B. Cohesion tension
C. Root pressure
D. Imbibition

Q.59 Which scientist does not match his achievements in the following options?

A. Lamarck published his theory of evolution
B. Lyell published principles of geology
C. Malthus published essay on principle of population
D. Cuvier published papers on inheritance

Q.60 In the peripheral nervous system, the nerves that arise from spinal cord and brain are called?

A. Frontal nerves
B. Temporal nerves
C. Cranial nerves
D. Spinal nerves

Q.61 These are properties of lipids:

A. Insoluble in water and soluble in fat solvent.
B. High energy content
C. Structural component of cell membrane
D. All of these

Q.62 Which of the following are not amniotes?

A. Mammals and birds
B. Birds and reptiles
C. Reptiles and amphibians
D. Amphibians and fishes

Q.63 What event occurs in the menstrual cycle when the level of progesterone declines?

A. Ovulation
B. Menstruation
C. Menopause
D. Fertilization

Q.64 Which statement best describes the Hardy-Weinberg principle?

A. Recessive alleles eventually disappear in large populations
B. Expected frequencies of alleles are impossible to predict mathematically
C. Dominant alleles become more prevalent in 1aarge populations
D. When there is a large population, the mechanism of inheritance does not change allele frequencies

Q.65 Adaptation of traits to better fill a niche is known as which of the following?

A. Polymorphism
B. Gene linkage
C. Specialization
D. Replication

Q.66 The frequency of allele if it is evolutionary successful is?

A. Increased
B. Decreased
C. No change
D. None of these

Q.67 Aerobic bacteria release:

A. Sulphur
B. Oxygen
C. CO_2
D. Hydrogen

Q.68 Bacteria without flagella are called:

A. Atrichous
B. Amphitrichous
C. Lophotrichous
D. Peritrichous

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Q.69 **Standard electrode potential is denoted by**
A. E
B. E^{+1}
C. E°
D. δ

Q.70 **What is the coordination number of Pt in $[PtCl(NO_2)(NH_3)_4]$**
A. 2
B. 4
C. 6
D. 7

Q.71 **Limiting reactant controls the amount of _____**
A. Reactant
B. Product
C. Both A & B
D. None of these

Q.72 **Which of the following element is not usually present in all proteins?**
A. Carbon
B. Hydrogen
C. Nitrogen
D. Sulphur

Q.73 **The biochemical process in the synthesis of alcohol in the presence of yeast is called as___**
A. Respiration
B. Photosynthesis
C. Fermentation
D. Aerobic Respiration

Q.74 **First member of alkynes is called as _____?**
A. Ethylene
B. Acetylene
C. Acetone
D. Ethene

Q.75 **BH_3 has geometry with H-B-H bond angels of 120°**
A. Linear
B. Trigonal planar
C. Tetrahedron
D. Bent

Q.76 **Cyclic compounds consist of all except?**
A. Alicyclic
B. Aromatic
C. Acyclic compounds
D. Carbocyclic compounds

Q.77 **Metals looks shiny as light falls on metal surface collide with mobile electrons and make them ___ these electrons give light when _____**
A. Neutral, Excited
B. Excited, de-excited
C. De-exited, excited
D. None of these

Q.78 **Why phenol is more acidic than alcohol?**
A. Due to presence of resonance in phenol
B. Due to absence of resonance in alcohol
C. Both A and B
D. Because in phenol H is attach to O

Q.79 **If pressure and volume of a gas are variable while temperature remains constant, this belongs to**
A. Charles's law
B. Boyle' law
C. Avogadro's law
D. Pascal's law

Q.80 **S_N1 reactions are favored by which of the following reaction?**
A. Water
B. Benzene
C. Carbon tetrachloride
D. Carbon disulphide

Q.81 **S_N1 reaction have which of the following specie formed and consumed in the reaction?**
A. Transition state
B. Intermediate
C. Carbanion
D. Carbene

Q.82 Instantaneous rate of reaction is the rate at any

A. At Equilibrium
B. One instant
C. Given temperature
D. Given pressure

Q.83 Redox reactions are actually transfer of

A. Electrons
B. Charges
C. Energy
D. Hydrogen ions

Q.84 Which of the following acid solution is used for the seasoning of food?

A. Butyric acid
B. Phthalic acid
C. Lactic acid
D. Acetic acid

Q.85 Cholesteryl benzoate turns milky at

A. 123 ° C
B. 135° C
C. 145° C
D. 179 ° C

Q.86 In the production of wrought iron Mg, Si and P are removed in the form of

A. Oxides
B. Silicates
C. Slag
D. Carbonates

Q.87 Which one of the following benzene molecules have

A. Two double bonds
B. Delocalized pi-electron charge
C. Three double bonds
D. One sigma bonds

Q.88 Carboxylic acids form dimer due to _____?

A. Small sizes
B. Polarity of C-O bond
C. H-Bonding
D. Dipole – Dipole interactions

Q.89 Activator of phosphatase enzyme is

A. Mn^{+2}
B. Mg^{+2}
C. Zn^{+2}
D. None of these

Q.90 A liquid crystalline state exists between two temperature i.e melting temperature and_____ temperature

A. Boling
B. Freezing
C. Clearing
D. All of these

Q.91 Plasma, the forth state of matter was identified by

A. Berzelius
B. William Crooks
C. Dalton
D. Rutherford

Q.92 Acetaldehyde undergoes polymerization with conc.H_2SO_4 and form_____?

A. Acetylides
B. Paraldehyde
C. Bakelite
D. Meta Acetaldehyde

Q.93 There are just only a few stable compounds, formed by noble gases like

A. XeF_2
B. $XeOF_2$
C. XeO_3
D. All of these

Q.94 Who attributed the deviation of real gasses from ideal behavior?

A. Boyle's law
B. Charles's law
C. Avogadro's law
D. Van der Waals

Q.95 An electron in an atom is completely described by its

A. 2 quantum numbers
B. Only one quantum number
C. 4 quantum numbers
D. 3 quantum numbers

Q.96 Enzymes are _____ in nature

A. Proteins
B. Carbohydrates
C. Lipids
D. Nucleic acid

Q.97 **The properties of liquid crystals are intermediate between crystals and**
A. Anisotropic liquids
B. Nematic liquids
C. Isotropic liquids
D. Liquids

Q.98 **Fraction of crude petroleum can be obtained by using**
A. Destructive distillation
B. Fractional distillation
C. Vacuum distillation
D. Distillation

Q.99 **In proteins, H-bonding is present between _____ ?**
A. C-H
B. N-H
C. O- H
D. Cl-H

Q.100 **Which of the following centers are present in the carbonyl compounds?**
A. Electrophilic
B. Nucleophilic
C. Electron deficient
D. All of these

Q.101 **Shifting the position of equilibrium can be used to increase**
A. Temperature
B. Pressure
C. Yield of reaction
D. All of these

Q.102 **Reduction of alkyl halides in the presence of Zn and mineral acid produces _____?**
A. Alkenes
B. Alkanes
C. Alkynes
D. Alcohols

Q.103 **An aromatic compound that can obtained from coal tar is**
A. Benzene
B. Toluene
C. Phenol
D. Diphenyl methane

Q.104 **Polymerization of ethene produces which of the following polymers**
A. Polyvinyl
B. Polyethyl
C. Polyethylene
D. Polyethoxy

Q.105 **Which one of the following has positive value?**
A. Heat lost by the system
B. Work done on the system
C. Work done by the system
D. Positive ΔE when heat lost by the system

Q.106 **If the concentration of reactant in a chemical reaction is unity the rate is called**
A. Unit rate constant
B. Specific rate constant
C. Relative rate constant
D. Average rate constant

Q.107 **Which will need maximum energy to remove its one electron**
A. $Na \rightarrow Na^{+} + e$
B. $Ca \rightarrow Ca^{+} + e$
C. $K \rightarrow K^{+}\ e$
D. $C^{2+} \rightarrow C^{3+} + e^{-}$

Q.108 **Reaction of vinyl acetylene with HCl produces?**
A. Polyvinyl Polymer
B. Polyvinyl Acetylene
C. Neoprene
D. Chloroprene

Q.109 **Carboxylic acids are formed by the hydrolysis of _____?**
A. Ester, Nitriles
B. Nitriles, amines
C. Alkenes, alkynes
D. Esters, alcohols

Q.110 **Which of the following specie has a permanent dipole moment?**
A. SF_4
B. SiF_4
C. BF_3
D. XeF_4

Q.111 **The number of charges present on a cation depends on number of electrons _____by the atom**
A. Gain
B. Lost
C. Accept
D. Produced

Q.112 In aldol condensation, nucleophile is ____?

A. Hydroxyl ion
B. Carbocation
C. Carbanion
D. Water

Q.113 The coordination number of Nickel in $[Ni(CO)_4]$ is

A. 2
B. 8
C. 6
D. 4

Q.114 Which of the following is not a mixture of hydrocarbons?

A. Candle wax
B. Kerosine oil
C. Paraffin oil
D. Vegetable ghee

Q.115 Which type of carboxylic acid is produced from the hydrolysis of nitriles?

A. Beta- hydroxyl carboxylic acids
B. Acid having one carbon more than the starting material
C. Acids having one carbon less than the starting material
D. Alpha- hydroxyl acids

Q.116 Dipole forces has direct relation with the ____?

A. Chemical properties of a substance
B. Kinetic properties of substance
C. Thermodynamic properties of substance
D. Nature of substance

Q.117 Critical temperature of ammonia is ____ °C

A.31.14
B.13.24
C.132.44
D.1.11

Q.118 The alcohol which are resistant to oxidation reactions are

A. Primary alcohols
B. Secondary alcohols
C. Tertiary alcohols
D. All of above

Q.119 A compound has an empirical (simple) formula, C_2H_2O. if the experimental molecular Weight is found to be in the rang 160-170 the molecular formula of this compound is {Atomic wt C=12, H=1.008, O = 16}

A. $C_3H_6O_3$
B. $C_4H_4O_2$
C. $C_8H_8O_4$
D. $C_6H_3O_3$

Q.120 Quantum number values for 2p orbitals are

A. $n=2, \ell=1$
B. $n=1, \ell=2$
C. $n=1, \ell=0$
D. $n=2, \ell=2$

Q.121 Fluorine has highest electronegativity value that is

A. 3.4
B. 4
C. 1.2
D. 2.6

Q.122 S-S bond is present in which of the ion pairs:

A. $S_2O_7^{2-}, S_2O_3^{2-}$
B. $S_4O_6^{2-}, S_2O_7^{2-}$
C. $S_2O_7^{2-}, S_2O_8^{2-}$
D. $S_4O_7^{2-}, S_2O_3^{2-}$

Q.123 The nature of amorphous sold is:

A. Isotropic
B. Anisotropic
C. Mesotrophic
D. Neotropic

Q.124 Enzymes speed up the reaction upto:

A. 10^{10}
B. 10^{20}
C. 10^{30}
D. 10^{50}

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Q.125 The oscillating object overshoots the rest position due to:
A. Restoring force
B. Inertia
C. Gravitational potential energy
D. Elastic potential energy

Q.126 _____relationship exists between current and voltage
A. non-linear
B. Varying
C. Linear
D. none of these

Q.127 The nucleus is made up of more neutrons than protons
A. N_2
B. O_2
C. U
D. None of these

Q.128 If wavelength = 500 nm of a photon, then its frequency is:
A. 5×10^{14} Hz
B. 6×10^{14} Hz
C. 7×10^{14} Hz
D. 8×10^{14} Hz

Q.129 An electrical instrument which is used to measure potential difference
A. Barometer
B. Minute
C. Galvanometer
D. Voltmeter

Q.130 The frequency of applied A.C is 2 kHz Its time period will be
A. 0.5×10^{-3} sec
B. 0.5 second
C. 5 sec
D. 3.sec

Q.131 Velocity is a
A. tensor
B. Vector
C. Scalar
D. none of these

Q.132 According to work energy principle, work is equal to
A. change in total energy
B. Change in kinetic energy
C. electronic energy
D. Both A & B

Q.133 The electron volt is the unit of ____
A. electric current
B. Electric potential
C. electric energy
D. electric flux

Q.134 Which of the following frequency of sound wave is audible?
A. 5Hz
B. 5000Hz
C. 2500 KHz
D. 50KHz

Q.135 Rectifier is a device which convert
A. A.C to D.C
B. D.C to A.C
C. A.C to triangular current
D. D.C to triangular current

Q.136 The value of universal gas constant (R) is _____
A. 8.314 J $mole^{-1}k^{-1}$
B. 138×10^{23}
C. electrons
D. All of these

Q.137 Which of the following is the same for isotopes?
A. Neutron
B. Protons
C. Electrons
D. Both B and C

Q.138 What is the maximum electron energy in neutron beta decay?
A. 783 eV
B. 783 KeV
C.783 GeV
D. 783 TeV

Q.139 Protons and neutrons are composed of smaller particles called
A. Quarks
B. Baryons
C. Bosons
D. Photons

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Q.140 A loop of radius 1 m is place on a inclined of 60 degree with the magnetic field of 100 T, corresponding flux will be

A. 314 wb
B. 107 wb
C. 157 wb
D. 435 wb

Q.141 In a travelling wave, five complete waves pass through a point in 10 seconds. Frequency of the wave is:

A. 0.5 Hz
B. 5 Hz
C. 15 Hz
D. 50 Hz

Q.142 The activity of a radioactive isotope decrease from 8000 to 1000 in 60 days The half title of isotope will be

A. 10 days
B. 20 days
C. 30 days
D. 40 days

Q.143 Coherent sources of light means

A. Multiple wavelength
B. Double wavelength
C. Single wavelength
D. Constant phase difference

Q.144 The distance between two consecutive nodes in a stationary wave is equal to:

A. One wavelength
B. 2.5 wavelength
C. 3 wavelength
D. Half wavelength

Q.145 Maximum efficiency of half wave rectification is.

A. 80.6%
B. 40.60%
C. 70%
D. 50%

Q.146 C_v/C_p is equals to

A. γ
B. γ^2
C. $1/\gamma$
D. R

Q.147 The source of gamma radiation is

A. Outside nucleus
B. Inside nucleus
C. Electronic transition
D. None of these

Q.148 If a proton, alpha particle and photon moving with same velocity enter in uniform magnetic field the particle will deflect more.

A. Proton
B. Alpha particle
C. Photon
D. All of these

Q.149 The slope of the work time graph is equal to

A. Displacement
B. Acceleration
C. Power
D. Energy

Q.150 Woolen clothes keep the body warm because of

A. Bad conductivity
B. Good conductivity
C. Low temperature
D. None of these

Q.151 The open-circuit test in a transformer is used to measure

A. Copper loss
B. Winding loos
C. Total loss
D. Core loss

Q.152 Frequency of a travelling wave is 2000 Hz. Its speed is 300 m/s Whit is its wavelength?

A. 203 m
B. 20 × 3m
C. 3/20m
D. 2/3m

Which statement is correct?

A. In an isobaric process $\Delta P \neq 0$
B. In a isochoric process $\Delta W \neq 0$
C. In an isothermal process $\Delta T = 0$
D. In a isothermal process $\Delta Q = 0$

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Q.154 **First law of Thermodynamics is related to**

A. Law of conversation of energy
B. Law of conversation of mass
C. Law of conversation of momentum
D. Law of conversation of charge

Q.155 **Correct form of ohm's law**

A. I=VR
B. $V \propto I$
C. $V \neq IR$
D. Both B and C

Q.156 **If the instantaneous current in a circuit is given by I= A sin (ωt) ampere, the rms value of the current is**

A. 2A
B. $\frac{A}{\sqrt{2}}$
C. $2\sqrt{2}A$
D. zero

Q.157 **The relation between linear and angular acceleration is**

A. $\vec{a} = \vec{\alpha}.\vec{r}$
B. $\vec{a} = \vec{r} \times \vec{\alpha}$
C. $\vec{a} = \vec{\alpha} \times \vec{r}$
D. $\vec{r} = \vec{a} \times \vec{\alpha}$

Q.158 **An object is moving at constant speed, which o the following is always true:**

A. Distance is greater than displacement
B. Distance is lesser than displacement
C. Distance is equal to displacement
D. Both A & C

Q.159 **When a spring is stretched work done by force is**

A. Positive
B. Negative
C. Zero
D. None of these

Q.160 **You have three capacitors each of 2 μF. in which of the following connections of the three capacitors, the resultant capacitance is 6μF?**

A. All three capacitors are in series
B. Two capacitors are in series, one in parallel
C. Two capacitors are in parallel, one in series
D. All three capacitors in parallel

Q.161 **The use of a filter circuit in a rectifier gives satisfactory performance only when the load**

A. Current is high
B. Current is low
C. Voltage is high
D. Voltage is low

Q.162 **An object is displaced from point A (0,1,1) m to point B (1,4,3) m under a constant force $\vec{F} = \left(\hat{i} + 2\hat{j} + 3\hat{k}\right)$ then work done by this force in this process**

A. 13 J
B. 15J
C. 0
D. 12 J

Q.163 **If capacitance is 4F and we insert a dielectric medium of permittivity 8 is introduce between the plates of the capacitor, what will be capacitors?**

A. 4
B. 8
C. 32
D. None

Q.164 **A wave passes through a medium, each particle of the medium performs 100 complete vibrations in 5 second, what is the frequency of the wave:**

A. 2Hz
B. 20 Hz
C. 4 Hz
D. 40Hz

Q.165 **Magnetic field is very strong where magnetic field lines are**

A. Zero
B. Far apart
C. Very close
D. None of these

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Q.166 What force provides the centripetal force to planets moving around the sun?

A. Coulomb force
B. Gravitational force
C. Magnetic force
D. None of these

Q.167 Electrostatic force is

A. Non-conservative
B. Conservative
C. Depends on shape of charge
D. None of these

Q.168 A beam of electrons can

A. Reflect
B. Refract
C. Both
D. None of these

Q.169 A stationary wave is set up on a string of length 10 cm. Four loops are formed. what is the distance between two consecutive crests?

A. 4.5 cm
B. 5 cm
C. 2.5 cm
D.1.25cm

Q.170 The turns ratio of transformer is 10, It means that;

A. Is=10Ip
B. Ns=Np/10
C. Ns=10Np
D. Vs=Vp/10

Q.171 The centripetal force is zero when velocity is

A. Equal
B. Zero
C. Maximum
D. None of these

Q.172 A cyclist come to skidding stop in 10 m the force on the cycle due to the road is 200 N and opposite to the motion how much work does the cycle do on the road

A. 20J
B. 2000 J
C. 0 J
D.200 J

Q.173 At 0 K which of the following properties of a gas will be zero.

A. K.E
B. P.E
C. Vibrational energy
D. Density

Q.174 Wave nature of electron resemble with

A. Alpha
B. Beta
C. Gamma
D. X-rays

Q.175 Negative of potential gradient is equal to

A. Electric intensity
B. Electric flux
C. Magnetic intensity
D. Magnetic flux

Q.176 The slope of distance – time graph will always be:

A. Negative
B. Positive
C. Zero
D. Maximum

Q.177 When the antinodes are all at their extreme displacements,

A. The energy stored is wholly kinetic
B. The energy stored is wholly potential
C. The energy stored is kinetic and potential
D. The energy stored is wholly chemical

Q.178 As mass number increase which of the following dose not change

A. Mass
B. Density
C. Volume
D. Binding energy

Q.179 What is power of Watt if it is operated at 220V and the current in the circuit at 1.5 Amp.

A. 330 Watt
B. 430 Watt
530 Watt
D. 500 Watt

otional emf can be produced with

A. Changing magnetic field in space
B. Changing magnetic field in time
Changing flux space
D. Constant magnetic field

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Q.181 **Choose the correct sentence.**
A. Does your train leave before eight o'clock.
B. Does your train leave before eight o'clock?
C. does your train leave before eight o'clock.
D. does your train leave before eight o'clock?

Q.182 **Did I say anything to make you angry?**
A. Declarative
B. Imperative
C. Interrogative
D. Exclamatory

Q.183 **Thank you. You've been very ____ through this time:**
A. ideal
B. are
C. kind
D. has

Q.184 **Either my mother or my father____ coming to the meeting:**
A. is
B. are
C. are being
D. has

Q.185 **I borrowed ____ pencil from your pile of pencils:**
A. a
B. an
C. the
D. no article

Q.186 **Choose the correct sentence.**
A. He always loved sweets. Chocolates, biscuits and cakes.
B. He always loved sweets. Chocolates. biscuits and cakes.
C. He always loved sweets. chocolates. biscuits and. Cakes.
D. He always loved sweets, chocolates, biscuits, and cakes.

Q.187 **Unburdened:**
A. Floundered
B. Extort
C. Free
D. Encumbered

Q.188 **We haven't come____ with an interesting theme for the advertising campaign:**
A. on
B. In
C. up
D. down

Q.189 **_____ people in the town know me better than the old ones:**
A. Only few
B. The few
C. Only the few
D. Few

Q.190 **It _____ (rain) since last night.**
A. raining
B. has been raining
C. rains
D. rained

Q.191 **I have already got a ___ at a hotel in Murree. We shall have no problem:**
A. prescription
B. property
C. reserve
D. reservation

Q.192 **Glared:**
A. Frown or blaze
B. Shine or sparkle
C. Grain or extinguish
D. Frown or eliminate

Q.193 **Choose the correct type of tense, "We will visit the museum:**
A. Present
B. Past
C. Future
D. None

Q.194 **"What are you doing here?" "I____TV."**
A. Watching
B. am watching
C. is watching
D. watches

Q.195 **Find the error:**
A. They talked through the entire movie.
B. The plants in this garden does not require much water.
C. She always brings turkey sandwiches for lunch.
D. No mistakes

Q.196 **Either my father or my brothers ____ going to sell the car:**
A. is
B. are
C. were
D. was

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Q.197 Mariam enjoys eating ___ cheese.

A. a
B. an
C. the
D. no article

Q.198 The students were awaiting for the arrival of the chief guest:

A. The students were
B. Awaiting for
C. The arrival of
D. The chief guest

Q.199 The sun ____ (shine) brightly:

A. shine
B. shined
C. shone
D. shinning

Q.200 Choose the correct synonym to baffled:

A. confused
B. refused
C. enlightened
D. confined

LOGICAL REASONING

Q.201 Statements:

I. The literacy rate in the district has been increasing for the last four years.

II. The district administration has conducted extensive training programed for the workers involved in the literacy drive.

A. Statement I is the cause and statement II is its effects
B. Statement II is the cause and statement I is its effects
C. Both the statements I and II are independent causes.
D. Both the statements I and II are effects independent causes.

Q.202 Look at this series 14, 28, 20, 40, 32, 64. What number should come next?

A. 52
B. 56
C. 96
D. 128

Q.203 CMM, EOO, GQQ. ___, KUU:

A. GRR
B. GSS
C. ISS
D. ITT

Q.204 Statements:

I. The availability of imparted fruits has increased in the indigenous market and so the demand for indigenous fruits has been decreased.

COURSE OF ACTION:

II. To help the indigenous producers of fruits, the government should impose high import duty on the se fruits. Even if these are not of good quality.

III. The fruit vendors should stop selling imported fruits. So that the demand for indigenous fruits would be increased

A. Both of them follows
B. None of them follows
C. Only I follows
D. Only II follows

Q.205 How many such pairs of letters are there in the word "HISTORICAL" which have as many letter between them in the word as in the English alphabet:

A. Four
B. Seven
C. Six
D. Eight

Q.206 Statement:

I. Police resorted to hath –charge to disperse the unlawful gathering of large number of people

The citizen's forum called a general strike in protest against the police atrocities

A. Statement I is the cause and statement II is its effects
B. Statement II is the cause and statement I is its effects
C. Both the statements I and II are independent causes.
D. Both the statements I and II are effects independent causes.

Q.207 **A book cannot exist without:**

A. Education
B. Pictures
C. Pages
D. Qualification

Q.208 **Statement:**

I. There has been a decline to the price of the personal computers.
II. School going takes are impressing in learning how the computer

A. Statement I is the cause and statement II is its effects
B. Statement II is the cause and statement I is its effects
C. Both the statements I and II are independent causes.
D. Both the statements I and II are effects independent causes.

Q.209 **Discoverable and palpable are _____ number same letter:**

A. 2
B. 3
C. 5
D. 4

ANSWER KEY

1	A	26	A	51	C	76	C	101	C	126	C	151	D	176	B	201	B
2	C	27	D	52	A	77	B	102	B	127	C	152	C	177	B	202	B
3	C	28	D	53	C	78	C	103	A	128	B	153	C	178	B	203	C
4	D	29	A	54	A	79	B	104	C	129	D	154	A	179	A	204	B
5	D	30	D	55	D	80	C	105	B	130	A	155	B	180	D	205	C
6	B	31	B	56	D	81	B	106	B	131	B	156	B	181	B	206	D
7	D	32	D	57	D	82	B	107	D	132	D	157	C	182	C	207	C
8	D	33	B	58	A	83	A	108	D	133	C	158	D	183	C	208	D
9	B	34	D	59	D	84	D	109	A	134	B	159	A	184	A	209	D
10	A	35	B	60	A	85	C	110	A	135	A	160	D	185	A		
11	C	36	B	61	D	86	C	111	B	136	A	161	A	186	D		
12	C	37	B	62	D	87	B	112	C	137	D	162	A	187	C		
13	B	38	A	63	B	88	C	113	D	138	B	163	C	188	C		
14	B	39	A	64	D	89	B	114	D	139	A	164	B	189	D		
15	B	40	C	65	C	90	C	115	B	140	C	165	C	190	B		
16	C	41	B	66	A	91	B	116	C	141	A	166	B	191	D		
17	A	42	D	67	C	92	B	117	C	142	B	167	B	192	A		
18	D	43	A	68	A	93	D	118	C	143	D	168	C	193	C		
19	B	44	C	69	C	94	D	119	C	144	D	169	B	194	B		
20	B	45	B	70	C	95	C	120	A	145	B	170	C	195	B		
21	A	46	C	71	B	96	A	121	B	146	C	171	B	196	B		
22	B	47	B	72	D	97	D	122	D	147	B	172	B	197	D		
23	B	48	A	73	C	98	B	123	A	148	A	173	A	198	B		
24	C	49	A	74	B	99	C	124	B	149	C	174	B	199	C		
25	B	50	B	75	B	100	A	125	B	150	A	175	A	200	A		

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PMC PRACTICE TEST – 3

Total MCQs: 210 Max. Marks: 210

BIOLOGY

Q.1 Among the following which is the longest supportive cell?
A. Trachea
B. Collenchyma cells
C. Sclereids
D. Tracheids

Q.2 Which of the following is soluble in hot water?
A. Starch
B. Glycogen
C. Amylose
D. Amylopectin

Q.3 What is critical in photoperiodism?
A. Length of light period
B. Length of dark period
C. Both (A) and (B)
D. None of these

Q.4 A type of bacterial cell that completely surrounded by flagella is called:
A. Diplococcus
B. Tetrad
C. Peritrichous
D. Monotrichous

Q.5 Amoeboid movements and movement of cyclosis is due to:
A. Microfilaments
B. Microtubules
C. Intermediate filaments
D. Cytoskeleton

Q.6 Which of these transports sperm from the testis to penis?
A. Sperm duct
B. Scrotum
C. Urethra
D. Gamete

Q.7 The darker outer portion of the brain is called:
A. White matter
B. Gray matter
C. Reflex arc
D. Medulla

Q.8 When were bacteriophages discovered by Twort?
A. 1915
B. 1920
C. 1910
D. 1820

Q.9 Which of the following is non-cellular in most cases in animals?
A. Chlorenchyma
B. Mesoderm
C. Sclerenchyma
D. Mesoglea

Q.10 The membrane of vacuole is called:
A. Tonoplast
B. Plasma membrance
C. Epidermis
D. Both (B) and (C)

Q.11 Which statements correctly outlines some of the main events in photosynthesis?
A. A 5C carbohydrate accepts carbon dioxide and is then reduced by NADPH derived from photophosphorylation
B. A 3C carbohydrate is regenerated and reduced by hydrogen molecules derived from photophosphorylation
C. Photolysis uses light to produce reduced NADP and oxygen, which are used to reduce a 3C carbohydrate
D. Photolysis produces NADPH and ATP which are used to reduce a 5C carbohydrate

Q.12 In photosynthesis, dark reaction is called so because:
A. It occurs in dark
B. It does not require light energy
C. It cannot occur during daytime
D. It occurs more rapidly at night

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Q.13 In uncompetitive inhibition, the inhibitor binds with:

A. Enzyme
B. Substrate
C. ES-complex
D. All of these

Q.14 Sycon is an example of:

A. Platyhelminthes
B. Annelida
C. Protozoa
D. Porifera

Q.15 As long as two species occupy different niches, there is?

A. Competition
B. No competition
C. Gene linkage
D. Polymorphism

Q.16 The type of plastids found in roots of plants _____.

A. Chloroplasts
B. Chromoplasts
C. Leucoplasts
D. All of them

Q.17 Which of the following is not respiration?

A. Breakdown of glucose
B. Formation of glucose
C. Release of energy
D. Exchange of gases

Q.18 Which of the following is made up of an afferent pathway form a receptor and an efferent pathway to an effector?

A. Nerve cell
B. Reflex arc
C. Receptor cells
D. Mixed nerve

Q.19 The types of gametes produced by two pairs of chromosomes can be?

A. 2
B. 4
C. 6
D. 8

Q.20 Which of the following statements about chordates is true?

A. They are protostomes
B. All chordates are vertebrates
C. They lack a coelom
D. Their anus forms from the blastopore

Q.21 The stretch reflex, the Golgi tendon reflex, the crossed extensor reflex, and the withdrawal reflex are included in:

A. Stretch reflex
B. Spinal reflex
C. Golgi tendon reflex
D. Crossed Extensor reflex

Q.22 Proteins are the polymers of:

A. Amino acids
B. Fatty acids
C. Nucleotides
D. None of these

Q.23 Which one of the following is not a double membranous structure?

A. Vacuole
B. Mitochondria
C. Chloroplast
D. Nucleus

Q.24 What do the two peaks in the action spectrum represent?

A. Absorption of light
B. Carbon dioxide consumption
C. Emission of light
D. Both (A) and (B)

Q.25 Pinworm is a common name used for which of the following?

A. Rhabditis
B. Ancylostoma duodenale
C. Taenia solium
D. Enterobius vermicularis

Q.26 Sex pili is formed in which of the following processes?

A. Sexual reproduction
B. Binary fission
C. Mitosis
D. Conjugation

Q.27 The sperm duct opens into which of the following?

A. Ureter
B. Urethra
C. Testes
D. All of these

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Q.28 Each nasal cavity is subdivided into _____ passageways in man.

A. 1
B. 2
C. 3
D. 4

Q.29 Radula is characteristic feature of:

A. Myriapoda
B. Molluscs
C. Echinoderms
D. Cnidarians

Q.30 Under the microscope, the bacteria appear a bluish-purple color. Which class of bacteria are on the slide?

A. Gram positive
B. Gram negative
C. *Mycoplasma*
D. Archea

Q.31 The most abundant intracellular free nucleotide is:

A. UTP
B. FAD
C. NAD^+
D. ATP

Q.32 A cell without a cell wall is termed as:

A. Tonoplast
B. Protoplast
C. Symplast
D. Epiblast

Q.33 The number of models that represent enzyme-substrate action is:

A. 1
B. 2
C. 3
D. 4

Q.34 Optimal pH of working of lipase is:

A. 5
B. 7.5
C. 9
D. 3

Q.35 Which of the following statements correctly describes the tobacco mosaic virus (TMV)?

A. RNA virus
B. ssDNA virus
C. Bacteriophage
D. dsDNA virus

Q.36 Which of the following are modern-day descends of the dinosaurs?

A. Birds
B. Lions
C. Panther
D. Bears

Q.37 The proximal part of the oviduct is significant because:

A. Fertilization occurs here
B. Implantation occurs here
C. Placenta is established here
D. None of these

Q.38 It is suspected that a cell is prokaryotic. The presence of which of these cell structures would confirm that cell is prokaryotic?

A. Cytoplasm
B. Ribosomes
C. Flagella
D. Peptidoglycan cell wall

Q.39 A pea plant with yellow seed was crossed to plant having green seeds. What will happen in F_1 if plants are breeding:

A. Half of seeds will be yellow
B. All the seeds will be green
C. Both will be present in ratio of 1:2:1
D. All seeds will be yellow

Q.40 Which of the following is a viviparous animal?

A. Goat
B. Duck
C. Crocodile
D. All of these

.41 A motor neuron and all the muscle fibers it supplies called a/an _____.

A. Motor unit
B. Neuromuscular junction
C. Neutral unit
D. Microtubules

Q.42 **Muscles are composed of:**
A. Silica
B. Polyester threads
C. Groups of cell fibers
D. Calcium and phosphorous

Q.43 **The genetically engineered virus is available for which of the following hepatitis virus?**
A. HBV
B. HAV
C. HCV
D. Both A and B

Q.44 **The total number of amino acids that have found in tissues and cells are:**
A. 25
B. 200
C. 20
D. 170

Q.45 **Trachea is also termed as:**
A. Voice box
B. Epiglottis
C. Bronchi
D. Windpipe

Q.46 **The fibrous connective tissue which attaches muscle to bone is called:**
A. Tendon
B. Ligament
C. Reticular tissue
D. Cartilage

Q.47 **The best definition of natural selection is:**
A. Survival of the fittest
B. The most fit individuals adapt to their environment better than less fit individuals
C. Those who are better, healthier, and live longer are the most fit within a population
D. Preservation of traits that lead to increased survival and reproduction

Q.48 **In the first reaction catabolism ____ free the ___.**
A. Melanin
B. Protein, amino acids
C. Rhodopsin
D. None of these

Q.49 **Which pigment protein is also known as muscle haemoglobin?**
A. Melanin
B. Myoglobin
C. Rhodopsin
D. Lutein

Q.50 **Edward Jenner began inoculating humans with material from lesions caused by which disease?**
A. Chickenpox
B. Smallpox
C. Avian pox
D. Cowpox

Q.51 **Which of these acts as a relay centre connecting hindbrain with the forebrain?**
A. Forebrain
B. Midbrain
C. Hindbrain
D. Limbic system

Q.52 **These are eaters of bacteria:**
A. Viroids
B. Bacteriophages
C. Prions
D. Virions

Q.53 **Cytochrome C is oxidized by which coenzyme in the ETC?**
A. Cytochrome a
B. Coenzyme Q
C. Coenzyme b
D. Coenzyme a

Q.54 **In pea, the gene for yellow color (C) is dominant over the gene for green color (c). To determine the genotype of an unknown yellow pea, what kind of pea should you cross with it?**
A. Another unknown green pea
B. Any genotype
C. Homozygous dominant
D. Homozygous recessive

Q.55 **In the plants, there are 50 or more thylakoids piled upon each other to form:**
A. Granum
B. Centrosome
C. Stroma
D. Multinucleate

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Q.56 The neurons that interpret and receive information and stimulate motor neurons are:

A. Sensory neurons
B. Motor neurons
C. Interneurons
D. Rotator neurons

Q.57 Lecithin contains _____.

A. Ethanolamine
B. Choline
C. Serine
D. Betaine

Q.58 A long polypeptide that is cut up to generate several small proteins:

A. Polyprotein
B. Polymerase
C. Polyisomerase
D. None of these

Q.59 Central nervous system is present in:

A. Asymmetrical animals
B. Bilaterally symmetrical animals
C. Radially symmetrical animals
D. Both B and C are correct

Q.60 From one pyruvate passing through Krebs cycle, how many NADH are formed?

A. 1
B. 2
C. 3
D. 4

Q.61 Viruses can bud off from:

A. Rough endoplasmic reticulum
B. Golgi complex
C. Cell membrane
D. All of the above

Q.62 Chitinous setae are the locomotory organs annelids, which are present on?

A. Cell wall
B. Prostomium
C. Nucleolus
D. Parapodia

Q.63 Which of the following is not true about skeletal muscle fibres?

A. Better adapted for slow sustained activities
B. For energy, they depend on anaerobic procedures
C. Myoglobin content is high
D. Possess mitochondria in huge numbers

Q.64 When a hemophilia carrier woman marries a normal man, who among her offspring maybe affected?

A. All her children
B. Half of her daughter
C. All of her daughters
D. Half of her sons

Q.65 Porcupine is a mammal because:

A. The scales on its body are modified as spines for protection against predators
B. It lays eggs and has mammary glands
C. The fur on its body is modified as spines and it is warm-blooded
D. None of the above

Q.66 Which of the following was considered as a missing link between reptiles and birds?

A. Pteranodon
B. Avimimus
C. Caudipteryx
D. Archaeopteryx

Q.67 'Omnis cellula e cellula' is hypothesized by:

A. Schleiden
B. Lorenz oken
C. Louis Pasteur
D. Rudolph Virchow

Q.68 The mechanism of enzyme activation is referred to as:

A. Activation energy
B. Catalysis
C. Enzyme energy
D. Denaturation

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Q.69 Alkanes are called as _____?
A. Olefines
B. Paraffins
C. Reactive
D. All of these

Q.70 Thermal energy is also called as _____?
A. Internal energy
B. Temperature of a body
C. Kinetic energy
D. Heat energy

Q.71 Which of the following properties does not belong to gases?
A. Indefinite volume
B. Indefinite shape
C. Low density
D. Strong interactions

Q.72 Each half reaction in ion electron method is balanced by adding:
A. Electrons on left hand side
B. Electron on right hand side
C. Both left -or right-hand side
D. None of theses

Q.73 The formula of Chile Saltpeter is:
A. $NaNO_3$
B. $CaCO_3$
C. $Ba(NO_3)_2$
D. NH_4Cl

Q.74 To conduct electricity through Ionic solid, ions should be:
A. Excited
B. Energized
C. Free
D. In random motion

Q.75 In Haber's process the final product ammonia is converted into:
A. Solid state
B. Liquid state
C. Gaseous state
D. None of these

Q.76 When an electron is added, energy is released, so electron affinity is given the:
A. Positive sign
B. Negative sign
C. Neutral
D. Delta sign

Q.77 The compounds which belongs to the same functional group forms a _____?
A. Class
B. Group
C. Homologous series
D. None of these

Q.78 Globulin proteins are found in:
A. Animals
B. Plants
C. Human beings
D. All of these

Q.79 How enthalpy changes of reactions can be measured?
A. By spectrometry
B. By conductometry
C. By calorimetry
D. By refractometry

Q.80 Which of the following forces has ability to form clusters and large molecules?
A. Ionic bond
B. Induced dipole forces
C. H-bond
D. All of these

Q.81 Reaction of Aldehydes with Tollen's regent results in formation of _____?
A. Red precipitate
B. Yellow precipitate
C. Silver mirror
D. Brick red precipitate

Q.82 The bonding pair of electrons are equally shared b/w the atoms in:
A. HF
B. HCl
C. H_2O
D. H_2

Q.83 The total of all the possible kind of energies in a system is called:
A. Total energy
B. Kinetic energy
C. Potential energy
D. Internal energy

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Q.84 Energy is absorbed:

A. In Bond Breaking
B. In endothermic reactions
C. In Bond Formation
D. Both A and B

Q.85 Rate diffusion of liquids is_____ than gases:

A. Lower
B. Higher
C. Equal to
D. All of these

Q.86 Rectified spirit is converted into the absolute alcohol by _____?

A. Crystallization
B. Distillation
C. Re-distillation
D. Fractional distillation

Q.87 Which of the following catalyst is used in Friedel craft reaction?

A. $ZnCl_2$
B. $KMnO_4$
C. $AlCl_3$
D. V_2O_5

Q.88 Which of the following compound shows more H-Bonding?

A. CH_3OH
B. CH_3CH_2OH
C. C_6H_5OH
D. $C_6H_{11}OH$

Q.89 Which of the following solvent favor SN_2 reactions?

A. Water
B. Ammonia
C. Carbon tetrachloride
D. Acetic acid

Q.90 Enzymes are called as ____?

A. Catalyst
B. Lipoproteins
C. Conjugated molecules
D. Biocatalyst

Q.91 Oxidation Number of all the elements in free state is:

A. Unity
B. Positive
C. Zero
D. Negative

Q.92 Au^{3+} has _____ configuration:

A. $5d^7$
B. $4d^9$
C. $5d^8$
D. $5d^{10}$

Q.93 In an irreversible reaction the tendency of it to go in reverse direction is:

A. High
B. Low
C. Negligible
D. None of these

Q.94 The strength of London forces depends on size of:

A. Electrons
B. Electronic cloud
C. Lone pair on an atom
D. Poles of atom

Q.95 The energy is ___ when oppositely charged ions brought close to each other:

A. Released
B. Absorbed
C. Remain same
D. Constant

Q.96 27 g of Al will react with how much mass of O_2 to produce Al_2O_3:

A. 8g of oxygen
B. 16g of oxygen
C. 32g of oxygen
D. 24g of oxygen

Q.97 The platinum in SHE act as a:

A. Buffer
B. Salt Bridge
Electrical conductor
D. All of these

ng and Boiling points depends on _____?

er of electrons
B. Number of Unpaired electrons
of Paired electrons
D. Number of Protons

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Q.99 Rate = k [NO][O_3], the order of this reaction is:

A. 2
B. 0
C. 1
D. 3

Q.100 Glucose is converted into ethanol by the _____ enzyme present in yeast.

A. Invertase
B. Urease
C. Glycolysis
D. Zymase

Q.101 In CCl_4, all C-Cl bonds are _____ but molecule is ____ overall:

A. Polar, nonpolar
B. Nonpolar. neutral
C. Polar, Neutral
D. Neutral, on polar

Q.102 Greater the amount of negative charge on an atom, the size of ion will also be:

A. Smaller
B. Greater
C. Same
D. Lower

Q.103 In a reaction having both alkyl halide and base, the base will attack on _____?

A. Electrophilic carbon
B. Nucleophilic carbon
C. Beta-hydrogen
D. None of these

Q.104 The expression for the radius of nth orbit of hydrogen atom was derived by:

A. Planks
B. Bohr
C. Rutherford
D. Einstein

Q.105 In a homologous series, adjacent members differ by a _____ unit?

A. CH_3
B. CH_2
C. CH
D. CH_4

Q.106 Nitrates of which pair of elements gives different products on thermal decomposition?

A. Na, K
B. Mg, Ca
C. Li, Na
D. Li, Ca

Q.107 In which of the following body part protein is not present?

A. Skin
B. Hair
C. Nails
D. Bones

Q.108 The region where probability of finding the electron is negligible is called as:

A. Nucleus
B. Atom
C. Orbital
D. Nodal plane

Q.109 Which of the following enzymes present in yeast helps out in fermentation?

A. Diastase
B. Maltase
C. Zymase
D. All of above

Q.110 1-Chloropropane and 2-Chloropropane are _____?

A. Position isomers
B. Chain Isomers
C. Functional Group isomers
D. Metamers

Q.111 Which one of the following is not a organic compound?

A. Urea
B. Methane
C. Carbon dioxide
D. Coal

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Q.112 What is the value of C–C bond length in benzene?

A. 154 pm
B. 120 pm
C. 134 pm
D. 139 pm

Q.113 Which of the following ester give Jasmine Flavour?

A. Ethyl acetate
B. Octyl Acetate
C. Amyl Butyrate
D. Benzyl Acetate

Q.114 The alkenes can be formed by alcohols in the presence of:

A. Acidified $KMnO_4$
B. Acidified $K_2Cr_2O_7$
C. Acidified $CuCl_2$
D. Pyridine

Q.115 ΔH_f of which of the following cannot be measured directly?

A. Al_2O_3
B. B_2O_3
C. CO
D. All of these

Q.116 How many unhybridized orbitals are there in Ethyne molecule

A. 1
B. 2
C. 3
D. 4

Q.117 The rate of diffusion of a gas having molar mass 32 as compared to H_2 gas will be:

A. 6 times
B. 4 times
C. One fourth
D. One eighth

Q.118 In Electrolysis of $NaNO_{3(aq)}$, Na^+ is:

A. Discharged at anode
B. Discharge at cathode
C. Do not discharge
D. None of these

Q.119 In one second if the concentration changes from 0.1 to 0.25 then the rate will be:

A. 0.02 Moles/dm^3s^{-1}
B. 0.03 Moles/dm^3s^{-1}
C. 0.15 Moles/dm^3s^{-1}
D. 0.11 Moles/dm^3s^{-1}

Q.120 Enzymes which bring about exchange functional group is called _____.

A. Oxidoreductase
B. Hydrolases
C. Ligases
D. Transferases

Q.121 Lower the Oxidation state of Metal more will be _____?

A. Acidity of metal
B. Polarization power
C. Basicity of metal
D. None of these

Q.122 It consists of discrete molecules:

A. Sodium chloride
B. Dry ice
C. Copper
D. $CaCl_2$

Q.123 The order consists of size of 's' orbital is as follows:

A. ..... 4s<3s<2s<1s
B. .....4s>3s>2s>1s
C. Constant
D. None of these

Q.124 Among halogens iodine is solid at room temperature while Br_2 is liquid and Cl_2 and F_2 are gases at room temperature, why?

A. Due to stronger dipole forces
B. Due to polarity
C. Due to stronger London forces
D. Due to stronger Debye forces

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Q.125 The number of protons in the nucleus is called _____ number:

A. Atomic
B. Charge
C. Atomic or charge
D. Neither atomic nor charge

Q.126 What does the constant n represent in the equation of state for an ideal gas PV=nRT?

A. Number of atoms in the gas
B. Number of moles of the gas
C. Number of nucleons
D. Number of molecules of gas

Q.127 In bridge rectifier uses:

A. One diode
B. Two diode
C. Three diodes
D. Four diodes

Q.128 A 250V bulb posses a current of 0.3A. Calculate the power in the lamp:

A. 50 W
B. 75W
C. 100 W
D. 90 W

Q.129 What will be the product of beta decay of C-14?

A. C-14
B. N-14
C. O-14
D. Be-14

Q.130 Who stated the Right-hand Thumb Rule?

A. Oersted
B. Maxwell
C. Einstein
D. Flaming

Q.131 A star moving away from earth shows:

A. Green shift
B. Red shift
C. Blue shift
D. None of these

Q.132 What is the SI unit of work?

A. joule
B. newton
C. watt
D. None of these

Q.133 Resistivity depends upon

A. Nature
B. Temperature
C. Both
D. None

Q.134 A car of mass M is moving with the speed v. The brake of mass m and specific heat capacity c, is used to stop the car. If half of the kinetic energy of their car is absorbed by the brake, then what is the increase in temperature of the brake?

A. $Mv^2 / 4mc$
B. $Mv^2 /2mc$
C. $mv^2/ 4Mc$
D. $mv^2/ 2Mc$

Q.135 Magnetic flux is scalar product of:

A. $\vec{B}$ and $\vec{V}$
B. $\vec{B}$ and $\vec{A}$
C. $\vec{B}$ and $\vec{I}$
D. None of these

Q.136 The relation between speed frequency and wavelength of a wave is:

A. Speed = (frequency) (wavelength)
B. Speed × frequency = wavelength
C. Speed= frequency/wavelength
D. Speed =frequency + wavelength

Q.137 If two-points charges of chare q_1 and q_2 are placed at distance d. The forces between them is proportional to.

A. d
B. d^2
C. 1/d
D. $1/d^2$

Q.138 The SI unit of angular displacement is:

A. metre
B. kilometer
C. radian
D. None of these

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Q.139 There are three bulbs of 60W 100W and 200W. Which bulb has thickest filament?

A. 100W
B. 200W
C. 60 W
D. All

Q.140 Which has less ripple factor

A. Half wave rectifier
B. Full wave rectifier
C. Both
D. None

Q.141 Work done by the centripetal force on a body moving in circle is zero because:

A. The body moves parallel to F
B. The body move opposite to F
C. The body move right angle to F
D. Centripetal and centrifugal balance each other

Q.142 $Req = R_1 + R_2 + R_3 + \ldots\ldots + Rn$ is for which combination?

A. Series
B. parallel
C. Both
D. None

Q.143 $\vec{F} = e(\vec{v} \times \vec{B})$ is valid for:

A. Electron
B. Proton
C. Neutron
D. All

Q.144 Joule/coulomb is unit of:

A. Electric potential difference
B. Electrical field strength
C. Magnetic field strength
D. Energy

Q.145 Transformer is used in rectification to _____ supply voltage:

A. Step up
B. Step down
C. Equalize
D. None of them

Q.146 The shaft of a motor rotates at a constant angular speed of 360rev/min. Angle turned through in 1 sec in radian is?

A. π
B. 3π
C. 6π
D. 12π

Q.147 Which two or more of the following actions would increase the energy stored in parallel plate capacitor when a constant potential difference is applied across the plates?

A. Decreasing the area of the plates decreasing the separation between the plates
B. Decreasing the area of the plates increasing the separation between the plates inserting a dielectric between the plates.
C. Increasing the area of the plates Decreasing the separation between the plates inserting a dielectric between the plates
D. Increasing the area of the plates increasing the separation between the plates

Q.148 Calculate the energy of a photon of wavelength 6600 angstroms.

A. $0.3 \times 10^{-19} J$
B. $3 \times 10^{-19} J$
C. $30 \times 10^{-19} J$
D. $300 \times 10^{-19} J$

Q.149 For an adiabatic process, the first law thermodynamics can be written as:

A. work done by system= decrease in internal energy of system
B. Work done by system=increase in internal energy of system
C. Work done on the system=increase in internal energy of system
D. Both A and C

150 In a bridge type full wave rectifier, if Vm is the peak voltage across the secondary of the transformer, the maximum voltage across each reverse biased diode is:

A. Vm
B. $Vm/\sqrt{2}$
C. 2Vm
D. Vm/3

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Q.151 Photocell is similar to:
A. Photoelectric effect
B. Compton effect
C. Pair production
D. None of these

Q.152 If the heat absorbed is 10J and work done is 5J, then change in internal energy is:
A. -5J
B. 10J
C. 15J
D. 5J

Q.153 Reciprocal of resistivity is called:
A. Resistance
B. Inductance
C. Conductivity
D. Flexibility

Q.154 The magnetic flux linked with a coil is inversely proportional to the:
A. Area of cross section
B. Number of turns
C. Magnetic field
D. None of these

Q.155 For constant linear acceleration, angular acceleration and radius are:
A. Equal
B. Inversely related
C. Directly related
D. No relation

Q.156 An armature coil consists of 30 turns of wire, each of area $A=0.05m^2$ and total resistance of 10 Ω. It rotates in a magnetic field of 0.15T at an angular speed of 84 radian per second. Determine the value of maximum induced emf produced in the coil.
A. 19V
B. 500V
C. 63V
D. 43V

Q.157 When a charge experience a force, there will be _____ field developed
A. Magnetic
B. Electric
C. Static
D. All of these

Q.158 The down quark has charge _____
A. -1/2
B. 1/2
C. -1/3
D. 2/3

Q.159 Acceleration of rolling object is zero at _____ point hill.
A. Highest
B. Lowest
C. Middle
D. None of these

Q.160 Electron cannot reside inside nucleus is explained by:
A. Compton effect
B. Photoelectric effect
C. Zeeman affect
D. Uncertainty principle

Q.161 Two forces of $F_1=5N$ and $F_2=15N$ are working on a body in opposite direction. If body displaced by 5m in direction of net force, what will be the work done by F_2:
A. 25J
B. -75J
C. 75J
D. 50J

Q.162 Alternating Current Generators use:
A. Coiled rings
B. Split rings
C. Slip rings
D. Solenoid rings

Q.163 Magnetic field lines form _____ loops from pole to pole.
A. Open
B. Closed
C. Branched
D. Opened or closed

Q.164 The density of oxygen is 16times the density of hydrogen. If the speed of sound in oxygen is v, the what is the speed of sound in hydrogen?
A. v/4
B. 4v
C. v/2
D. 2v

Q.165 Two copper conductors have equal length. The cross-sectional area of one conductor is four times that of the other. The conductor having smaller cross-sectional area has a resistance of 40 ohms the resistance of other conductor will be

A. 160ohm
B. 80ohm
C. 20ohm
D. 10ohm

Q.166 The Na atom cannot produce x-rays because

A. Inner shell transition is possible
B. Inner shell transition is not possible
C. it is non-radioactive
D. None of these

Q.167 Atom is neutral because it has equal number of:

A. Charge particles
B. Uncharged particles
C. neutrons
D. All of these

Q.168 What is the SI unit of EMF?

A. ohm
B. ampere
C. volts
D. newton's

Q.169 An object is undergoing simple harmonic motion. It's time period is T and total energy is E. the amplitude of vibration is reduced to half. What is the new time period and total energy of the system

A. Time period=T/2 total energy =E/4
B. Time period = T, total energy =E/4
C. Time period=T/2 total energy=E/2
D. Time period=T total energy=E/2

Q.170 An object is moving in a circle. It completes 6 revaluations in every 3 seconds. What is its frequency?

A. 0.5π Hz
B. 2π Hz
C. 0.5 Hz
D. 2 Hz

Q.171 The anti-particle of quark is_____

A. Electrons
B. Protons
C. Neutrons
D. None of these

Q.172 Two wires of copper are the same length but have different diameters. When they are connected in series across a battery, the heat generated is H_1 during the same time is H_2 then:

A. $H_1=H_2$
B. $H_1<H_2$
C. $H_1>H_2$
D. $H_1 \neq H_2$

Q.173 Calculate the charge passing through the circuit if it's current is 10A and the recorded them in 15 seconds:

A. 1500 coulombs
B. 150 coulombs
C.13400 coulombs
D. 140 coulombs

Q.174 To get a peak load voltage of 40V out of a bridge rectifier, what should be the approximate rms value of secondary voltage?

A. 0V
B. 14.4V
C. 28.3V
D. 56.6V

Q.175 A system which can neither exchange matter nor energy with the surroundings is called

A. Open system
B. Isolated system
C. Closed system
D. Ideal system

Q.176 Photoelectric effect is not given by

A. X-rays
B. Gamma
C. Beta
D. All

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Q.177 A cable 4km long and of total resistance 1 ohm carries electric current from a generator producing 100kW at 10,000 volts. The current in amperes in the cable is:

A. 10
B. 10,000
C. 1000
D. 100,000

Q.178 A particle carrying a charge 3e, accelerates through a potential difference of 2V. The energy acquired by it is:

A. 1.6×10^{-19}J
B. 9.6×10^{-19}J
C. 9.6×10^{-18}J
D. 1.6×10^{-18}J

Q.179 Magnetic field lines have a property that lines are_____:

A. Non intersecting
B. Intersect near south pole
C. Intersect near north pole
D. Intersect every where

Q.180 1 light year distance is:

A. Distance travelled by earth in one year
B. Distance travelled by star in one year
C. Distance travelled by light in one year
D. Distance travelled by light in one galactic year

ENGLISH

Q.181 Choose the correct sentence.

A. Huda watched the news on the BBC.
B. Huda watched the news on the BBC?
C. Huda watched the news on the bbc.
D. Huda watched the news, on the BBC

Q.182 Measles _____ a contagious childhood disease.

A. is
B. are
C. were
D. be

Q.183 She ran with quick steps to the house when it _____ (start) raining.

A. start
B. starting
C. started
D. was started

Q.184 Fetch _____ chair and sit down.

A. a
B. an
C. the
D. no article

Q.185 John_____ to be a doctor.

A. wants
B. wanting
C. is wanting
D. have wanted

Q.186 Father must _____ left his briefcase at the office.

A. has
B. had
C. have
D. having

Q.187 Even if the doctor put in his best efforts, he could not succeed in saving patient.

A. Even if the doctor
B. put in his best efforts, he
C. could not succeed in
D. saving patient

Q.188 I like _____ blue T-shirt over there better than _____ red one.

A. a…a
B. a… an
C. the… a
D. the…. the

Q.189 Relinquish:

A. Use
B. Surrender
C. Increase
D. Retain

Q.190 You will find more information in the _____.

A. attached to file
B. attached file
C. attachment file
D. file what is attached

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ANSWER KEY

1	C	26	D	51	B	76	B	101	A	126	B	151	A	176	C	201	B
2	D	27	B	52	B	77	C	102	B	127	D	152	D	177	A	202	B
3	B	28	C	53	A	78	D	103	C	128	B	153	C	178	B	203	A
4	C	29	B	54	D	79	C	104	B	129	B	154	D	179	A	204	D
5	A	30	A	55	A	80	C	105	B	130	D	155	B	180	C	205	A
6	A	31	D	56	C	81	C	106	C	131	B	156	A	181	A	206	B
7	B	32	B	57	B	82	D	107	D	132	A	157	B	182	A	207	C
8	A	33	B	58	D	83	D	108	A	133	C	158	C	183	C	208	A
9	D	34	A	59	B	84	D	109	D	134	A	159	D	184	A	209	B
10	A	35	A	60	C	85	A	110	A	135	B	160	D	185	A	210	C
11	A	36	A	61	D	86	C	111	C	136	A	161	C	186	C		
12	B	37	A	62	D	87	C	112	D	137	D	162	C	187	D		
13	C	38	D	63	B	88	A	113	D	138	C	163	B	188	D		
14	D	39	D	64	D	89	C	114	A	139	B	164	B	189	B		
15	B	40	A	65	B	90	D	115	D	140	B	165	D	190	B		
16	C	41	A	66	D	91	C	116	D	141	C	166	B	191	B		
17	B	42	C	67	D	92	C	117	B	142	A	167	A	192	A		
18	B	43	D	68	B	93	C	118	C	143	B	168	C	193	C		
19	B	44	D	69	B	94	B	119	C	144	A	169	B	194	A		
20	D	45	A	70	D	95	A	120	D	145	D	170	D	195	D		
21	B	46	A	71	D	96	D	121	C	146	D	171	D	196	C		
22	A	47	C	72	C	97	C	122	B	147	C	172	D	197	C		
23	A	48	B	73	A	98	B	123	B	148	B	173	B	198	C		
24	B	49	B	74	C	99	A	124	C	149	D	174	C	199	B		
25	D	50	D	75	B	100	D	125	B	150	A	175	B	200	A		

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PRACTICE TEST – 4

BIOLOGY

Max. Marks: 210

Q.1 **Resolution of human eye is:**
A. 2.0 μm
B. 2.0 mm
C. 1.0 μm
D. 1.0 mm

Q.2 **Human accumulated glycogen is an example of:**
A. Phospholipid
B. Polysacchrides
C. Carbohydrates
D. Both 'B' and 'C'

Q.3 **Cellular organelles that interact with hydrogen peroxide are called:**
A. Glyoxysomes
B. Lysosomes
C. Ribosomes
D. Peroxisomes

Q.4 **In some cases the blastomere can produce complete embryo the cleavage will be:**
A. Spiral and determinate
B. Spiral and indeterminate
C. Radial and determinate
D. Radial and indeterminate

Q.5 **The spinal cord acts as a link between body parts and____**
A. Brain
B. Skull
C. Heart
D. Lungs

Q.6 **The area on the left hemisphere related to speech is called:**
A. Amygdala
B. Broca's area
C. Hypothalamus
D. Occipital lobe

Q.7 **The chief cells at the base of the gastric glands secrete:**
A. Trypsinogen
B. Pepsin
C. Trypsin
D. Pepsinogen

Q.8 **Coelom is lined by which of the following?**
A. Parietal mesoderm
B. Visceral mesoderm
C. Mesoderm
D. Both A and B

Q.9 **The complete, mature and infectious particle is known as:**
A. Capsid
B. Virion
C. Bacteriophage
D. Nucleus

Q.10 **The random change in allele frequencies is known as:**
A. Genetic drift
B. Diversity
C. Linkage
D. All of these

Q.11 **Who coined the term Animalcules for microorganisms like Bacteria and protozoa?**
A. Robert Koch
B. Louis Pasteur
C. Alexander Fleming
D. Leeuwenhoek

Q.12 **Larynx is also called:**
A. Glottis
B. Voice box
C. Epiglottis
D. Both B and C

Q.13 **Which one of the following surrounds the testicles?**
A. Penis
B. Urethra
C. Sperm duct
D. Scrotum

Q.14 **The main target in the prevention of lung cancer is eliminating the**
A. Tobacco smoking
B. Chemicals
C. Pollutants
D. Mutagens

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Q.15 Inbreeding increases the frequency of which of the following?

A. Heterozygous
B. Genetic diversity
C. Genetic linkage
D. Homozygous

Q.16 In sexual reproduction, plants have diplohaplontic life cycle with alternating?

A. Haploid sporophyte and diploid gametophyte generations
B. Diploid sporophyte and diploid gametophyte generations
C. Haploid sporophyte and haploid gametophyte generations
D. Diploid sporophyte and haploid gametophyte generations

Q.17 Which of the following is true of actin and myosin filaments?

A. Troponin, calcium, and tropomyosin interact with the thick filament
B. Actin molecules are classified as thin filaments, whereas myosin molecules are classified as thick filaments
C. Both A and B
D. None of these

Q.18 The organelle serving as a primary packaging area for molecules that will be distributed throughout the cell is:

A. Vacuole
B. Plastids
C. Lysosomes
D. Golgi apparatus

Q.19 What type of prokaryotic genetic recombination requires the presence of plasmids?

A. Transduction
B. Transformation
C. Binary fission
D. Conjugation

Q.20 Who sent his theory to Darwin?

A. Mendel
B. Wallace
C. Lamarck
D. Lynn Morgulis

Q.21 The embryo attaches to the wall of uterus:

A. Endometrium
B. Myometrium
C. Exometrium
D. None of these

Q.22 If all members of a population are homozygous for the same allele, that allele is said to be:

A. Mobile in gene pool
B. Random in gene pool
C. Stationary in gene pool
D. Fixed in gene pool

Q.23 Which of the following is evidence of a common ancestor?

A. Morphological similarities
B. Fossil record
C. Vestigial characteristics
D. All of these

Q.24 The calvin cycle begins when carbon dioxide reacts with:

A. NAD
B. ADP
C. FADH
D. RUBP

Q.25 Assume that a trait is expressed according to the mechanism of complete dominance. Each gene contributes one of two possible alleles. Which of the following statements is true?

A. The genotype is the expressed trait of the individual
B. There are three possible phenotypes the organism can express
C. If two heterozygous organisms mate, 25% of the progeny will be homozygous
D. If two heterozygous organisms mate, 75% of the progeny will display the dominant phenotype

Q.26 Vitamin which doesn't act as a coenzyme is?

A. Vitamin c
B. Vitamin b
C. Vitamin b1
D. Vitamin b2

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Q.27 **The contractile protein of skeletal muscle involving ATPase activity is:**
A. Actin
B. Myosin
C. Troponin
D. Tropomyosin

Q.28 **Binding of myosin head to actin generates muscle contraction. After muscle contraction the myosin head has to be removed from the actin. Which of the following accomplishes this task?**
A. Binding of ATP to tropomyosin
B. Binding of calcium to troponin
C. Binding of troponin to actin
D. Binding of ATP to myosin head

Q.29 **Sertoli cells are responsible for which of the following?**
A. Provide liquid medium to cells in testes
B. Provided protection and nourishment to cells
C. Secrete testosterone
D. Both A and B

Q.30 **The fine ends of the bronchioles are called:**
A. Bronchi
B. Bronchioles
C. Pharynx duct
D. Alveolar ducts

Q.31 **Amount of oxygen in inspired air is 21% while in expired air is**
A. 0.11
B. 0.12
C. 0.15
D. 0.16

Q.32 **Which one is a bony fish?**
A. Trout
B. Sea horse
C. Shark
D. Lamprey

Q.33 **Biomolecules such as starch cellulose and glycogen yield which of the following upon complete hydrolysis?**
A. Maltose
B. Sucrose
C. Glucose
D. Galactose

Q.34 **Which of the following was discovered by J.Seiler in 1914 in moth?**
A. XO-XX
B. XY-XX
C. ZZ-ZW
D. None of these

Q.35 **A much smaller and ancient bacteria are present in group**
A. Archaeobacteria
B. Lactobacteria
C. Eubacteria
D. Anaerobic bacteria

Q.36 **During aristotle time, it was through that**
A. Oranisms ranged from simple to complex
B. One type of organisim give rise to another type of organism
C. Both A and B
D. All living things specially created by nature

Q.37 **The example of coordinators in chemical coordination is:**
A. Endocrine glands
B. Spinal cord
C. Brain
D. Human eyes

Q.38 **What is the size range of Porifera?**
A. Few centimeter wide to more than one meter tall
B. Few decimeter wide to more than one meter tall
C. One meter wide to more than millimeter tall
D. Few millimeter wide to more than one meter tall

Q.39 **Diameter of thick filament is approximately how many nm?**
A. 15
B. 16
C. 17
D. 18

Q.40 **Which cells is the longest in the human body?**
A. Muscle cells
B. Nerve cells
C. Bone cells
D. Gland cells

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Q.41 Where in the female reproductive system thousands of eggs are found?

A. Ovaries
B. Vagina
C. Fallopian tube
D. Uterus

Q.42 The stretch reflex is a:

A. Monosynaptic reflex
B. Polysynaptic reflex
C. Hemi synaptic reflex
D. None of these

Q.43 What cycle begins when newly formed phages integrate the bacterial DNA?

A. Lysogenic cycle
B. Lytic cycle
C. Both
D. None

Q.44 How many ml of oxygen are present in a litre of water?

A. 10
B. 20
C. 40
D. 200

Q.45 A bond formed by linkage between OH of carboxyl group of one amino acid and H of amino group another amino acid which releases water is called?

A. Glycosidic bond
B. Phosphodiester bond
C. Peptide bond
D. Ionic bond

Q.46 All of them are fish except:

A. Perch
B. Jellyfish
C. Plaice
D. Trout

Q.47 The optimum pH of salivary amylase is?

A. 6.8
B. 6
C. 8.8
D. 8

Q.48 The glycine generated during photorespiration enters:

A. Glyoxysomes
B. Mitochondria
C. Peroxisomes
D. Ribosomes

Q.49 Where does the AIDS virus infect?

A. RBCs
B. Helper T- cells
C. Leuckocytes
D. None

Q.50 In yeast pyruvate is broken down to:

A. Acetyl coA
B. Alcohol
C. Lactic acid
D. All of these

Q.51 Bacteria are capable of "sharing" genetic material that can be advantageous in certain environments. This type of gene transmission is an example of which of the following?

A. Transduction
B. Transformation
C. Binary fission
D. Conjugation

Q.52 A mother is homozygous for blood type A and a father has blood type AB. Which of the following could describe their child's blood type?

A. A
B. O
C. A or AB
D. B

Q.53 Vitamins which are not stored in body are called?

A. Fat soluble vitamins
B. Minerals
C. Fats
D. Water soluble vitamins

Q.54 All of the following describe concerning viral multiplication and nucleic acids are true EXCEPT that:

A. Viruses contain DNA or RNA, not both.
B. Viruses replicate only in living cells.
C. Viruses use the cell's biosynthetic machinery to synthesize copies of themselves.
D. Viral mRNA, viral tRNA, and viral ribosomes are used in viral replication.

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Q.54 What is the product of the ETC in animals?
A. Oxygen
B. Carbon dioxide
C. Water
D. All of these

Q.55 Where does germ cells are produced?
A. Uterus
B. Ovaries
C. Eggs
D. Fallopian tube

Q.56 The movement of minerals or water via plasmodesmata is known as:
A. Apoplast
B. Symplast
C. Vascular
D. Fallopian tube

Q.57 Uterus open into the vagina through:
A. Uterus
B. Cervix
C. Oviduct (fallopian tube)
D. Ovary

Q.58 Abscisic acid promotes flowering is short day plants and inhibit in long day plants, which of the following is antagonistic to abscisic acid in term of flowering?
A. Gibberellins
B. Cytokinins
C. Sarcomere
D. Myofibrils

Q.59 The cell membrane of a skeletal muscle cell is called:
A. Sarcoplasm
B. Sarcolemma
C. Sarcomere
D. Myofibrils

Q.60 The long unbranched, slender tubulin protein is present in:
A. Microtubules
B. Intermediate filament
C. Actin
D. All of these

Q.61 Which of these is common in both lymph vessels and veins?
A. Both have small bore
B. Both have valves
C. Both have low blood pressure
D. Both are communicated

Q.62 Which of the following would most greatly increase the activity of an enzyme functioning in the small intestine?
A. Decrease the temperature
B. Increase the amount of enzymes
C. Decrease the pH
D. Increase the amount of substrate

Q.63 Which of the following is not true of virions?
A. Reproduce independently
B. Contain DNA
C. Contain RNA
D. Extracelluler

Q.64 The oldest mineral discovered so far is which of the following, which dates back to 4.4 billion years.
A. Iron
B. Zircon
C. Diamond
D. Cadmium

Q.65 Which statement is true noncompetitive inhibitors?
A. They bind covalently to the enzyme and disrupt the substrate from attaching
B. They bind at the active site of the enzyme
C. They actively block the enzyme from attaching to the substrate.
D. They alter the conformation of the enzyme.

Q.66 Which of the following is NOT a bony fish?
A. Perch
B. Plaice
C. Trout
D. Shark

Q.67 The right side of the body is controlled by:
A. Left cerebral hemisphere
B. Right cerebral hemisphere
C. Hippocampus
D. Corpus callosum

Q.69 Classification of crystalline solids is based upon the arrangement of

A. Molecules
B. Atoms
C. Ions
D. All of these

Q.70 Which of the following suffix is used for the common naming of alkene?

A. -ene
B. -ylene
C. -yne
D. -eylene

Q.71 Which of the following enzyme is not used during fermentation process for making ethanol?

A. Diastase
B. Zymase
C. Protease
D. Maltase

Q.72 Concentration of reactants and products are expressed as moles per unit

A. Area
B. Length
C. Volume
D. None of these

Q.73 Any specie which carry a positive charge and can accept electrons is called as ____?

A. Electrophile
B. Anion
C. Nucleophile
D. Electrophobic

Q.74 In Thermodynamic terms boundary separates_____?

A. Surrounding from the environment
B. Reactants from contamination
C. System from surrounding
D. Products from the surrounding

Q.75 Nucleophillic addition reactions of carbonyl compounds can be catalyzed by ____?

A. Acid
B. Base
C. Water
D. Both acid and base

Q.76 Which one is radioactive?

A. Cs
B. Fr
C. Li
D. K

Q.77 dx/dt is rate of change of concentration with respect to

A. Temperature
B. Pressure
C. Time
D. None of these

Q.78 The gas laws describes the _____ behavior of gases

A. Abrupt
B. Non-uniform
C. Uniform
D. Disordered

The compounds having –COOH group are called as ____ ?

A. Aldehydes
B. Ketones
C. Carboxylic acids
D. Alcohols

Q.80 The temperature at which enzyme activity is maximum is called as _____ ?

A. Maximum temperature
B. Absolute temperature
C. Critical temperature
D. Optimum temperature

Q.81 Down's Cell is used for the electrolysis of

A. Aqueous NaCl
B. Aqueous $NaNO_3$
C. Fused NaCl
D. Fused $NaNO_3$

Q.82 In which of the following reaction steps, free radical is formed?

A. Initiation, termination
B. Termination, propagation
C. Only initiation
D. Initiation, propagation

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Q.83 **Work done by the system is always**
A. Positive
B. Zero
C. Negative
D. Equal to Unity

Q.84 **Soap and detergents show cleansing action because of the presence of ____ of molecules**
A. Opposite poles
B. Polar part
C. Non polar part
D. Positive end

Q.85 **Standard Reduction potential is found by dipping the electrode in its own Ion with molarity equals to**
A. 0.1
B. 1
C. 1.5
D. 0

Q.86 **Which is not a heterocyclic compound?**
A. Furan
B. Pyrrole
C. Pyridine
D. Ethane

Q.87 **Which of the following reaction is used to produce symmetrical alkanes from alkyl halides?**
A. Wittig reaction
B. Kolbe's electrolysis
C. Reduction of alkyl halide
D. Wurtz reaction

Q.88 **Benzophenone is also known as:**
A. Dipheny ketone
B. Ethyl Phenyl ketone
C. Tri Phenyl ketone
D. None of these

Q.89 **What is the correct general formula of Grignard reagent?**
A. RMX
B. R_2 MgX
C. $RMgX_2$
D. RMgX

Q.90 **The side of the manometer in which mercury rises faces the**
A. Atmosphere
B. Liquid
C. Container
D. Gas

Q.91 **Haemoglobin is example of which protein.**
A. Transport proteins
B. Structural proteins
C. Genetic proteins
D. Regulatory proteins

Q.92 **When ethyl alcohol is oxidized with potassium dichromate, which product is formed?**
A. Acetic acid
B. Butanoic acid
C. formic acid
D. Pentanoic acid

Q.93 **Instantaneous dipole-Induced dipole forces are also named as?**
A. Debye forces
B. Dipole-dipole forces
C. London Dispersion forces
D. H-bonding

Q.94 **Which one of the following in correct molecular mass of protein?**
A. 9000
B. Less than 10000
C. 10000
D. More than 10000

Q.95 **The molecule of water has structure**
A. Cubic
B. Tetrahedral
C. Trigonal
D. Hexagonal system

Q.96 **Who was able to determine the distance b/w K^+ and Cl^- in potassium chloride?**
A. Bohr's
B. Pauling
C. Berzelius
D. Rutherford

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Q.97 Sum of the oxidation numbers of all the molecules in a neutral atom is

A. Unity
B. Negative
C. 1
D. Zero

Q.98 Phenol is changed into cyclohexanol by the following method

A. Hydrogenation
B. Reaction with formaldehyde
C. Nitration
D. Halogenation

Q.99 Lanthanides and actinides are also called as____ ?

A. Rare earth elements
B. Outer transition elements
C. Non typical elements
D. Typical transition elements

Q.100 The amount of the energy evolved during the formation of hydrogen molecule is

A. 436.45 KJ/mol
B. 444.45 J/mol
C. 436.45 J/mol
D. 444.45 KJ/Mol

Q.101 The rate of formation of ammonia is not economical at

A. Low temperature
B. Very high pressure
C. Both A and B
D. None of these

Q.102 Half-life can be found out for a reaction of

A. First order
B. Second order
C. Any order
D. Zero order

Q.103 Which of the following is used as disinfectant?

A. Phenylhydrazone
B. Phenol
C. Acetic acid
D. Vinegar

Q.104 At Equilibrium the reaction mixture contains

A. Higher [R]
B. Higher [P]
C. Lower [R]
D. All are possible

Q.105 Which of the following reaction does acetylene gives due to its acidic hydrogens?

A. Ozonolysis
B. Hydroxylaiton
C. Acetylide formation
D. Kolbe'

Q.106 Which of the following alkyl halide give SN_1 reaction?

A. 1-chloropropane
B. 2-chloropropane
C. n-butyl chloride
D. 2-methyl, 2-chloropropane

Q.107 Which one of the following has highest number of unpaired electrons?

A. Fe^{2+}
B. Mn^{2+}
C. Cr^{5+}
D. Zn^{2+}

Q.108 How many organic compound are known _____?

A. 850000
B. Over 6 million
C. 6 million
D. 5 million

Q.109 Which one of the following is not the property of a system?

A. enthalpy
B. Internal energy
C. Thermal energy
D. Temperature

Q.110 Which of the following are the products of catalytic oxidation of methane?

A. CO_2, H_2O
B. CO, H_2O
C. CO_2, H_2
D. CH_3, OH

The tendencies of elements to have relation with each other can be understand by

A. Lowry concept
B. Pauling concept
C. Lewis concept
D. Arrhenius concept

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Q.112 Number of peaks forms in a mass spectrograph shows number of _____ of an element

A. Electrons
B. Isotopes
C. Protons
D. Neutrons

Q.113 In which of the following benzene is isolated?

A. Naphthalene
B. Diphenyl ethane
C. Phenanthrene
D. Anthracene

Q.114 Which of the following is a dihydric alcohol?

A. Ethanol
B. Methanol
C. Glycerol
D. Glycol

Q.115 Which character of p-orbital determines the geometry of molecules

A. Planar
B. Axial
C. Non directional
D. Directional

Q.116 By changing Pressure at equilibrium which value is changing

A. Kc
B. Kp
C. Equilibrium Position
D. All of these

Q.117 The slope determined by drawing a right angled triangle drawn with tangent as hypotenuse will be same

A. with different sizes of triangles
B. At different point on cure
C. At the start and end of curve
D. All of these

Q.118 Oxidative cleavage of alkenes takes in the presence of ____?

A. Acidic cold $KMnO_4$
B. Warm Acidic $KMnO_4$
C. Warm alkaline $KMnO_4$
D. Alkaline cold $KMnO_4$

Q.119 Isoelectronic species have same

A. Electronic configuration
B. Ionic size
C. Reactivity
D. pH

Q.120 Organic compounds are

A. Volatile
B. Non-volatile
C. Feasible
D. None

Q.121 The most symmetrical crystal system

A. Triclinic
B. Tetragonal
C. Cubic
D. Rhombohedral

Q.122 In electrochemical cell positive ions are migrated towards

A. Anode
B. Cathode
C. Toward the bottom of the cell
D. Toward the walls of the cell

Q.123 NAD contains which vitamin as cofactor.

A. B1
B. B2
C. C
D. B3

Q.124 Which of the following has greater polarizability?

A. N_2
B. Cl_2
C. O_2
D. I_2

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Q.125 Watt-hour measures_____

A. Current
B. Electrical energy
C. Power
D. Voltage

Q.126 According to Faraday law induced voltage is produced by change in

A. Electric field
B. Magnetic field
C. Both A or B
D. Position

Q.127 A current of 5A flows in a resistor of 2 ohms. Calculate the energy dissipated in 300 seconds in the resistor.

A. 5 kJ
B. 10 kJ
C. 15 kJ
D. 20 kJ

Q.128 The value of angular momentum is maximum when θ is

A. 60 degrees
B. 45 degrees
C. 0 degree
D. 90 degrees

Q.129 If a pipe is closed at one end and open at the other, the closed end is a:

A. antinode
B. node
C. rarefaction
D. crest

Q.130 If a person is irradiated accidently by high radiation what immediate effects would be seen?

A. Skin burning
B. High blood pressure
C. Fever
D. Any of these

Q.131 From the following properties of a wave, the one that is independent of the other is its

A. Amplitude
B. Frequency
C. Wavelength
D. Time period

Q.132 Work done on a ceiling fan by gravity is

A. Maximum
B. Zero
C. Minimum
D. Infinity

Q.133 The penetrating power of x-rays depends on

A. frequency
B. amplitude
C. wavelength
D. all of these

134 Calculate the maximum emf when the velocity is 10m/s, the length is 3m and the magnetic field density is 5T?

A. 150V
B. 300V
C. 100V
D. 0V

.135 Accelerating frame of reference which has constant acceleration is

A. Constant moving car
B. Moving train
C. Freely falling body on earth
D. None of these

136 The angular acceleration is similar to

A. centripetal acceleration
B. centrifugal acceleration
C. both A and B
D. none of these

37 Which of the following process is reversible?

A. Transfer of heat by radiation
B. Electric heating by nichrome wire
C. Transfer of heat by conduction
D. Isothermal compression

38 A standing-wave pattern is formed when the length of the string is:

A. an odd multiple of quarter wavelength
B. an integral multiple of quarter wavelength
C. an integral multiple of wavelength
D. an integral multiple of half wavelength

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Q.139 The concept of work function was given by
A. Bohr
B. Einstein
C. Rutherford
D. none of these

Q.140 Average dc voltage across the load in terms of V_{max} for half wave rectification is
A. 0.532 V_{max}
B. 0.637 V_{max}
C. 0.759 V_{max}
D. 0.437 V_{max}

Q.141 If a charge of 2C is travelling parallel to a magnetic field of 4T with 20m/s. Calculate the net force on it
A. 160 N
B. 120 N
C. 0N
D. 100 N

Q.142 The work done can also be calculated by:
A. gradient of tangent of the curve of P-V graph
B. area of the curve under P-V graph
C. area of the curve under p-T graph
D. gradient of tangent of the curve of p-T graph

Q.143 Centre tape rectifier circuit consists of ____diode
A. 1
B. 2
C. 3
D. 4

Q.144 When a body moves vertically upward, the work done by the gravity will be
A. positive
B. zero
C. negative
D. none of these

Q.145 A monatomic ideal gas is thermally insulated, so no heat can flow between it and its surroundings. Is it possible for the temperature of the gas to rise?
A. Yes. The temperature can rise if work is done by the gas
B. No. The only way that the temperature can rise is if heat is added to the gas
C. Yes. The temperature can rise if work is done on the gas
D. No. The only way that the temperature can rise is by adding more molecules in container

Q.146 Gamma rays travel _____distance in air
A. Long
B. Short
C. Absorbed immediately
D. Never ending distance

Q.147 A stone is whirled in a vertical circle at the end of the string. When the stone is at the highest position the tension in the string is?
A. max
B. zero
C. equal to the weight of the stone
D. less than the weight of the stone

Q.148 Vertical velocity vs time graph for a projectile motion
A. Follows a elliptical path
B. Follows a parabolic path
C. A straight-line
D. Is nonlinear

Q.149 Under a cyclic path, internal energy after complete cycle is same as
A. 2(initial)
B. Initial heat
C. Initial internal energy
D. Initial work

Q.150 _____ is a source of electrical energy having fixed polarity and terminals
A. Motor
B. Metals
C. Battery
D. Generator

Q.151 A 4kg eagle picks up a 75g snake and raises it 2.5m from the ground to a branch. What is the work done by the eagle on the snake? (Assume g = 10 m/s^2)
A. 100J
B. 1.875J
C. 18.75 J
D. 187.5 J

Q.152 Do magnetic flux lines intersect?
A. yes
B. no
C. depends on strength of field
D. Cannot be determined

Q.153 A 100 turns coil of area $0.1m^2$ rotates at half a revolution per second. It is placed in a uniform magnetic field of 0.01 T perpendicular to the axis of rotation of the coil. Calculate the maximum voltage generated in the coil?

A. 256.33V
B. 89.12V
C. 0.314V
D. 3.1455V

Q.154 The atomic mass unit is unit of

A. Distance
B. Mass
C. Time
D. None of these

Q.155 The ratio of gravitational force to electric force is always

A. Greater than unity
B. Less than unity
C. Equal to unity
D. zero

Q.156 Superposition of two waves having slightly different frequency, same amplitude and travelling the same direction is called:

A. Interference
B. Diffraction
C. Beats
D. Stationary wave

Q.157 Electric potential difference between the two points can be defined as.

A. Difference of the kinetic energy per unit charge
B. Difference of the kinetic energy
C. Difference of the potential energy per unit charge
D. Difference of the potential energy

Q.158 If a photon is absorbed by a electron the energy of electron

A. Increase
B. Decrease
C. Remain same
D. Another photon will be released by electron

Q.159 The speed of photons in vacuum is_____ than in liquid water

A. Higher
B. Smaller
C. Equal
D. None of these

Q.160 Ripple factor of full wave rectifier is

A. 1.21
B. 0.6
C. 0.482
D. 0.9

Q.161 Two α-particles have the ratio of their velocities as 3:2 on entering the field. If they move in different circular paths, then the ratio of the radii of their paths is

A. 2:3
B. 3:2
C. 4:9
D. 9:4

162 PD stands for

A. Potential difference
B. Potential deviation
C. Power difference
D. Power dissipated

A constant force of 10N is applied on a body which causes displacement of 12cm what will be the work done

A. 120 J
B. 12 J
C. 1.2 J
D. 18 J

64 A pipe is filled with a gas and open at one end. If the length of the pipe is 0.6 m and the speed of sound in the gas in 300m/s. Then frequencies of the first two harmonics are:

A. 125 Hz and 250 Hz
B. 250 Hz and 750 Hz
C. 250 Hz and 500 Hz
D. 125 Hz and 375 Hz

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Q.165 Gamma rays are attracted towards
A. negative plate
B. positive plate
C. no deflection
D. None of these

Q.166 Electric current may be defined as
A. Rate of flow of charge
B. Rate of flow of momentum
C. Rate of flow of power
D. None of these

Q.167 One of the major reasons for heat loss in transformer is
A. Radiation loss
B. Convection loss
C. Eddy current loss
D. None of these

Q.168 The H atom has_____ quark
A. 1
B. 2
C. 3
D. 4

Q.169 4000 Coulomb charges were passing from the wire for about 12 seconds. Estimate the current during this process?
A. 333.3 ampere
B. 333.33 volts
C. 666.67ampere
D. None of them

Q.170 Two tuning forks produces N beats. If one of these tuning forks has the frequency f, then the frequency of the other would be:
A. N – f
B. N/f
C. N × f
D. N + f

Q.171 KE of body is increased by 44%, what is the percentage increase in the momentum
A. 10%
B. 20%
C. 30%
D. 44%

Q.172 The frame of reference could be
A. Fixed always
B. Not fixed always
C. At rest
D. None of these

Q.173 C-14 decays with a half-life of about 5800 years. In a sample of bone the ratio of C-14 to C-12 is found to be $1/4^{th}$ of what its is in free air. This bone may belong to a period about X centuries ago, where X is nearest to:
A. 2×58
B. 58
C. 58/2
D. 3×58

Q.174 The slope of distance – time graph will always be:
A. Negative
B. Positive
C. Zero
D. Maximum

Q.175 The relation between horsepower and watt is
A. 1 hp = 546 watts
B. 1 hp = 746 watts
C. 1 hp = 1000 watts
D. 1 hp = 946 watts

Q.176 A load of resistance 0.04 Ω is attached to the cell having E.M.F 1.5 V and 15 A is drawn in the circuit. The internal resistance of cell will be
A. 0.6 Ω
B. 0.06 Ω
C. 6 Ω
D. 0.3 Ω

Q.177 In a hydrogen atom, which of the following electronic transitions would involve the maximum energy change?
A. n = 2 to n = 1
B. n = 3 to n = 1
C. n = 4 to n = 2
D. n = 3 to n = 2

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Q.178 Particles that have less mass than protons

A. Mesons
B. Baryons
C. Photon
D. Meons

Q.179 Which law is based upon law of conservation of energy?

A. Lenz Law
B. Faraday Law
C. Ohms Law
D. Coulombs Law

Q.180 Two same charges are placed a certain distance apart in air. If a brass plate is introduced between them, the force between them will be

A. Increases
B. Decrease
C. Remain same
D. Not predicted

ENGLISH

Q.181 It is the duty of every citizen to do his utmost to defend the hardly won freedom of the country.

A. It is the duty of every citizen
B. to do his utmost
C. to defend the hardly won
D. freedom of the country

Q.182 How we _____ to ageing is a choice we must make wisely.

A. respond
B. absolve
C. discharge
D. overlook

Q.183 We will need _____ umbrella today.

A. a
B. an
C. the
D. no article

Q.184 What tense is the verb in this sentence? 'they go to college on Mondays.'

A. present
B. past
C. future
D. none of these

Q.185 The train leaves _____ 5 o'clock, hurry up!

A. at
B. in
C. around
D. under

Q.186 The plane _____ late because one of the passengers was sick.

A. grew up
B. blew up
C. went off
D. took off

Q.187 Choose the correct sentence.

A. He visit the temple frequently.
B. He visits the temple frequently.
C. He had visiting the temple frequently.
D. He have had visited the temple frequently.

Q.188 Please give me ____ cake that is on the counter.

A. a
B. an
C. the
D. no article

Q.189 We must go and congratulate him for his brilliant performance.

A. we must go
B. and congratulate him for
C. his brilliant
D. performance

190 Choose the correct sentence.

A. the class will begin. next Tuesday 6th September; at 6 p.m
B. The class will begin next Tuesday 6th September at 6p.m!
C. The class will begin next Tuesday, 6th September, at 6p.m.
D. The class will begin next Tuesday, 6th September at 6p.m.

191 We _____ (laugh) at the funny clowns.

A. laugh
B. laughs
C. laughing
D. laughed

Q.192 Ninety rupees _____ too much for this bag.

A. is
B. are
C. be
D. were

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Q.193 Jovial
A. merry
B. sad
C. sombre
D. laborius

Q.194 Choose the correct spelling of the word
A. readey
B. raddy
C. reddy
D. ready

Q.195 Choose the correct sentence.
A. Mother said "leave the dishes on the table until we have finished eating."
B. Mother said "Leave the dishes on the table until we have finished eating."
C. Mother said, "Leave the dishes on the table until we have finished eating."
D. Mother said, leave the dishes on the table until we have finished eating.

Q.196 What a tragedy!
A. Declarative
B. Imperative
C. Interrogative
D. Exclamatory

Q.197 Choose the correct sentence.
A. I did not accompanied them.
B. I do not accompanied them.
C. I does not accompany them.
D. I did not accompany them.

Q.198 Choose the correct spelling of the word;
A. comitte
B. commite
C. committee
D. comittee

Q.199 Further research is needed to find out what side _____ this pill has on a person's digestive system.
A. affects
B. effects
C. defects
D. suspects

Q.200 _____ camel is the ship of the desert.
A. A
B. An
C. The
D. No article

LOGICAL REASONING

Q.201 Statements:
I. All film stars are playback singers.
II. All film directors are fill stars.

Conclusion:
I. All film directors are playback singers.
II. Some film stars are film directors.

A. Only II follows
B. Either I or II follows
C. Neither I nor II follows
D. Both I and II follows

Q.202 23rd letter of English alphabets is
A. X
B. W
C. Z
D. Y

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Q.203 Statements:

Should admission to the professional degrees in Pakistan be given only on merit without any concession to any particular group of students?

Arguments:

I. Yes. This will improve the quality of the professional institutes and degrees as they will be able to complete the degree successfully.

II. No. This will keep a large number of socially and economically backward students out of the reach of professional institutes and degrees.

A. If only argument I is strong.
B. If only argument II is strong
C. If both I and II are strong
D. If neither I nor II is strong

Q.204 Statements:

I. Since Amna's baby died at birth, she wanted another immediately.

II. Amna abducted the infant and took it out of the hospital.

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both statements I and II are independent causes
D. Both statements I and II are the effects of independent cause

Q.205 The yard is to inch as quart is to

A. Gallon
B. Ounce
C. Milk
D. Liquid

Q.206 The term "midnight sun" refers to the time when the sun sets at 12 a.m.

A. A long period of time when the sun shines in the polar circle
B. A full moon
C. Twilight
D. Both A and B

Q.207 If a computer has more than one processor then it is known as?

A. Uni-process
B. Multiprocessor
C. Multi-threaded
D. Both A and B

Q.208 Statements:

I. Most of the steel producing companies in the country have made considerable profit during the last financial year.

II. Many Asian countries have been importing huge quantities of steel from Pakistan

A. Statement I is the cause and statement II is its effect
B. Statement II is the cause and statement I is its effect
C. Both the statements I and II are independent causes
D. Both the statements I and II are effects of some common cause

Q.209 The high school math department needs to appoint a new chairperson, which will be based on seniority. Ms. West has less seniority than Mr. Temple, but more than Ms. Brody. Mr. Rhodes has more seniority than Ms. West, but less than Mr. Temple. Mr. Temple doesn't want the job. Who will be the new math department chairperson?

A. Mr. Rhodes
B. Mr. Temple
C. Mr. West
D. Mr. Brody

Q.210 Here are some words translated from an artificial language.

granamelke means big tree
pinimelke means little tree
melkehoon means tree house
Which word could mean big house?

A. Granahoon
B. Pinishur
C. Pinihoon
D. Melkegrana

ANSWER KEY

1	D	26	A	51	D	76	B	101	C	126	B	151	B	176	B	201	D
2	D	27	B	52	C	77	C	102	C	127	C	152	B	177	B	202	B
3	D	28	D	53	D	78	C	103	B	128	D	153	C	178	A	203	C
4	D	29	B	54	D	79	C	104	D	129	B	154	B	179	A	204	B
5	A	30	D	55	C	80	D	105	C	130	D	155	B	180	B	205	B
6	B	31	D	56	B	81	C	106	D	131	A	156	C	181	C	206	A
7	D	32	A	57	B	82	D	107	B	132	B	157	C	182	A	207	B
8	C	33	C	58	B	83	C	108	B	133	A	158	A	183	B	208	B
9	B	34	C	59	A	84	A	109	C	134	A	159	A	184	A	209	A
10	A	35	A	60	B	85	B	110	A	135	C	160	C	185	A	210	A
11	D	36	C	61	A	86	D	111	B	136	D	161	B	186	D		
12	B	37	A	62	B	87	D	112	B	137	D	162	A	187	B		
13	D	38	D	63	B	88	A	113	B	138	D	163	C	188	C		
14	A	39	B	64	A	89	D	114	D	139	B	164	D	189	B		
15	D	40	B	65	B	90	A	115	D	140	B	165	C	190	D		
16	D	41	A	66	D	91	A	116	C	141	C	166	A	191	D		
17	B	42	A	67	D	92	A	117	D	142	B	167	C	192	A		
18	D	43	A	68	A	93	C	118	C	143	B	168	C	193	A		
19	D	44	A	69	D	94	D	119	D	144	C	169	A	194	D		
20	B	45	C	70	B	95	B	120	A	145	C	170	D	195	C		
21	A	46	B	71	C	96	B	121	C	146	A	171	B	196	D		
22	D	47	A	72	C	97	D	122	B	147	B	172	B	197	D		
23	D	48	B	73	A	98	A	123	A	148	C	173	A	198	C		
24	D	49	B	74	C	99	A	124	D	149	C	174	B	199	B		
25	D	50	B	75	D	100	A	125	B	150	C	175	B	200	C		

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PMC PRACTICE TEST – 5

Max. Marks: 210

Total MCQs: 210

BIOLOGY

Q.1 Coelom that develops from the archenteron as outpunching is:
A. Pseudocoelom
B. Schizocoelom
C. Entercoelom
D. Tube within tube

Q.2 Enzymes work by which of the following?
A. Increasing the activation energy
B. Reducing the activation energy
C. Making endergonic reactions endergonic
D. Making endergonic reaction exergonic

Q.3 Ribosomes combined with mRNA are called:
A. Lysosome
B. Nucleosome
C. Polysome
D. Polysome

Q.4 The upward movement of sap by the xylem is:
A. Ascent of sap
B. Plasmolysis
C. Deplasmolysis
D. Guttation

Q.5 Photosystem II has molecules which absorbs maximum light of?
A. 680nm
B. 100nm
C. 700nm
D. 670nm

Q.6 What are the subunits of capsids?
A. Capsomeres
B. Flagella
C. Hyphae
D. Septa

Q.7 An enzyme which requires a biological change in order to become active is called?
A. Transferase
B. Zymogen
C. Hydrogenase
D. Trypsin

Q.8 When two or more clearly different phenotypes exists in same population, this phenomenon is called:
A. Replication
B. Polymorphism
C. Gene linkage
D. Gene expression

Q.9 Which of the following section of a sarcomere does not shorten during contraction?
A. I band
B. H zone
C. A band
D. Z-line

Q.10 The radial symmetry is found in the animals of which of the following phylum?
A. Protozoa
B. Porifera
C. Cnidaria
D. Platyhelminthes

Q.11 When resources gets scarce, the population growth?
A. Becomes fast
B. Slows down
C. Remains same
D. Becomes stop

Q.12 According to Ivanovski what are soluble living germs
A. Bactria
B. Viruses
C. Fungi
D. Bothe A and B

Q.13 If both the alleles are same with respect to genes then they are called?
A. heterozygous
B. unicellular
C. homozygous
D. none of these

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The part of chloroplast where CO_2 is fixed to manufacture sugar is?
A. stroma
B. grana
C. thylakoid
D. outer membrane

It is most energy rich compound
A. $FADH_2$
B. ATP
C. NADH
D. GTP

Central nervous system consists of:
A. Brain and spinal cord
B. Cerebrum and spinal column
C. Spinal nerves only
D. Cerebellum and brain stem only

Aquatic arthropods belonging to this class breathe through gills.
A. Insects
B. Arachnids
C. Crustaceans
D. Arachnids and crustaceans

Which cells secrete flexible, elastic, non-living matrix collagen in cartilage?
A. Osteocytes
B. Osteoclasts
C. Chondroevtes
D. Osteoblasts

Salamander belongs to which of the following class?
A. Pisces
B. Aves
C. Reptiles
D. Amphibians

Darwin described his theory of natural selection as which of the following?
A. Punctuated equilibrium
B. Survival of the fittest
C. Inheritance of acquired characteristics
D. Descent with modification

In which step lysozyme is released by the bacteriophage?
A. Attachment
B. Penetration
C. Injection
D. Replication

In asexual reproducing offspring are genetically?
A. Identical to the parents
B. Mutated
C. non identical to the parents
D. Fittest to environment

Most reflex arcs are:
A. Monosynaptic reflex
B. Polysynaptic reflex
C. Hemi Synaptic Reflex
D. None of these

Nitrogenous bases such as choline and serine are a significant part of which of the following?
A. Sphingolipids
B. Phospholipids
C. Phoshodiester
D. None of these

The wings of a bird and the wings of a beetle are considered?
A. Taxonomic
B. Phylogenetic
C. Homologous
D. Analogous

The voice box leads to the trachea which is also called:
A. Bronchi
B. Bronchioles
C. Windpipe
D. Alveolar duct

What is the function of lysozyme released by bacteriophages?
A. Injection DNA
B. Replication
C. Dissolve cell wall
D. Control over biosynthetic machinery

Function of cell wall in prokaryotes is:
A. To give cells rigidity
B. To give specific shape
C. To protect from osmolysis
D. All A, B and C

Q.29 Which one of the following biomolecules is most abundant in animals?

A. Starch
B. Cellulose
C. Glycogen
D. All of these

Q.30 Carotenoids perform protective function in which of the following organism?

A. Animal
B. Plants
C. Both
D. None of these

Q.31 Nutrition to egg in ovary is provided by which of the following?

A. Germ cells
B. Milk cells
C. Follicle cells
D. All A, B and C

Q.32 The response of the sympathetic nervous system is known as:

A. Autonomic response
B. Flight response
C. Somatic response
D. Reflex response

Q.33 The abundant inhibitory neurotransmitter found in the CNS is called:

A. Gamma-glutamyltransferase
B. Gamma-linolenic acid
C. Gamma-Aminobutyric acid
C. None of these

Q.34 Viral envelop is composed of:

A. Proteins
B. Glycoproteins
C. Lipids and proteins
D. All A, B and C

Q.35 Which one is not the characteristic of Kingdom Animalia?

A. All animals are ingestive heterotrophs
B. It is largest kingdom
C. All animals are eukaryotes
D. All animals develop from the dissimilar gametes

Q.36 When vasopressin is not secreted, the condition is called?

A. Acromegaly
B. Diabetes mellitus
C. Dwarfism
D. Diabetes insipidus

Q.37 Which of these is a eucoelomate?

A. Earthward
B. Jelly fish
C. Sycon
D. Planaria

Q.38 What was the correct classification according to Linnaeus?

A. Similar genera in one family
B. Similar species in one genus
C. Similar families in one order
D. All of above

Q.39 Many sarcomeres in series make up the length of a:

A. Microtubules
B. Myofibril
C. Myosin filament
D. M-line

Q.40 Koshland in 1959 proposed the modified form of which of the following?

A. Unit membrane model
B. Fluid mosaic model
C. Reflective index model
D. Induced fit model

Q.41 Extremely long molecule of DNA that is tightly folded to fit inside the cell component is called?

A. Nucleus
B. Chromosome
C. Chromatin body
D. Chromatid

Q.42 Breathing is considered as a:

A. Chemical process
B. Biochemical process
C. Mechanical process
D. Both A and B

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Q.43 **Which of the following best describes competitive inhibitors?**
A. Do occupy active site
B. Destroy the structure of enzyme
C. Resemble structurally with substrate
D. Both B and C

Q.44 **In a typical menstrual cycle of 28 days, what is the most likely fertile period?**
A. Days 5 to 10
B. Days 1 to 5
C. Days 14 to 15
D. Days 11 to 14

Q.45 **The membrane around the vacuole is known as:**
A. Tonoplast
B. Elaioplast
C. Cytoplast
D. Amylopiast

Q.46 **The infection of lunges is called:**
A. Emphysema
B. Asthma
C. Pneumonia
D. Bronchitis

Q.47 **Stretch receptors are present in _____ of the tetrapods.**
A. Hepatic arteries
B. Carotid arteries
C. Renal arteries
D. Pulmonary arteries

Q.48 **Which one is not cytoplasmic body?**
A. Mitochondria
B. Vacuole
C. Cell membrane
D. Ribosome

Q.49 **The semi-solid mass in stomach is known as:**
A. Bolus
B. Chyme
C. Serum
D. Food

Q.50 **Fibers of extracellular matrix are attached to _____ plasma membrane.**
A. Phospholipids
B. Glycolipids
C. Proteins
D. Carbohydrates

Q.51 **Which statement describes an incorrect difference between a plant cell and a bacterial cell?**
A. Bacterial cell 70S ribosomes whereas a plant cell has 80S ribosome
B. Bacterial cell divides by binary fission whereas n plant cell divides by mitosis
C. Bacterial cells do not have a nuclear membrane whereas plant cells do
D. None of the above

Q.52 **Compound Microscope was first used by:**
A. A.V. Leeuwenhoek
B. Pasture
C. Janssen and Hans
D. None of these

Q.53 **How much net gain of G3P is obtained during Calvin cycle?**
A. 3
B. 6
C. 2
D. 1

Q.54 **The process that has transformed life on earth from its earliest forms to vast diversity is?**
A. Mutation
B. Evolution
C. Migration
D. Genetic drift

Q.55 **Which of the following is the name of the modified endoplasmic reticulum found in muscle cells?**
A. Tubule
B. Sarcomere
C. Myoplasmic reticulum
D. Sarcoplasmic rectum

Q.56 **Carbohydrate catabolism is concerned with the fate of:**
A. ATP
B. Glucose
C. Amino acid
D. all of these

Q.83 Which is the common name of the compound? $CH_3-(CH_2)_2-CH_2-Cl$

A. Chloropentane
B. n-Chloropentane
C. n-pentyl chloride
D. Chloropentane

Q.84 S_N2 reaction have which of the following specie formed and consumed in the reaction?

A. Transition state
B. Intermediate
C. Carbanion
D. Carbene

Q.85 Which ion will have a maximum value of the heat of hydration?

A. AI^-
B. Cs^+
C. Ba^-
D. Mg^{+2}

Q.86 Which of the following method is used to prepare Ethylene glycol from ethene?

A. Dehydration
B. Hydroxylation
C. Hydration
D. Luca's test

Q.87 Which of the following is a poor leaving group in nucleophilic substitution reactions?

A. Cl^-
B. Br^-
C. I^-
D. OH

Q.88 By increasing which of the following factor polarizability increases?

A. Atomic radius
B. Ionization energy
C. Ionic radius
D. Hydration energy

Q.89 What are the products of destructive distillation of coal?

A. Coal tar
B. Coke
C. Coal gas
D. All of above

Q.90 Which of the following condition is constant in Bomb catorimeter?

A. Pressure
B. Volume
C. Temperature
D. All of these

Q.91 The shielding effect is also called

A. Zeeman effect
B. Screening effect
C. Negative effect
D. Reducing effect

Q.92 The reactions of carboxylic acids which involve H atom removal of OH group form ____ as major product in all reactions?

A. Esters
B. Nitriles
C. Ketones
D. Salts

Q.93 Which of the following is most soluble in water?

A. Propanoic acid
B. Pentanoic acid
C. Hexanoic acid
D. Butanoic acid

Q.94 Which of the following is produced by heating of bones?

A. Gelatin
B. Cheese
C. Albumin
D. Jelly

Q.95 Different kind of atoms of same element are called isotope having different ____ but same ____ properties

A. Physical, atomic
B. Physical, chemical
C. Chemical, physical
D. Chemical, atomic

Q.96 The number of reacting molecules which change their concentration in chemical change is called

A. Extent of a Reaction
B. Order of a Reaction
C. Specific rete of a reaction
D. Enthalpy of reaction

Q.97 Lattice Points are also called

A. Space lattice
B. Crystal lattice
C. Lattice sites
D. Lattice location

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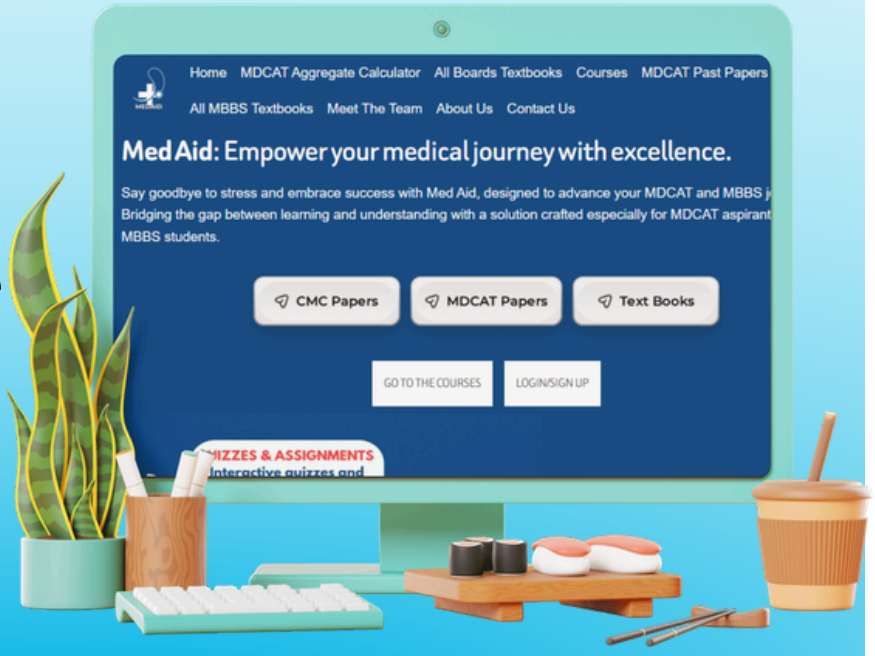

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