

Question No: 1 The temperature at which inactive enzyme regains its function is called as?

- (a) Maximum temperature (b) Minimum Temperature
(c) Favourable temperature (d) Optimum temperature

Question No: 2 Dominance is the physiological effect of an allele over its partner allele occupying the:

- (a) Same locus on same chromosome
(b) Different locus on same chromosomes
(c) Same locus on respective homologue
(d) Different locus on respective homologue

Question No: 3 Which of the following is a product of neurosecretory cells?

- (a) Aldosterone (b) Thyroxine (c) Corticosterone (d) Vasopressin

Question No: 4 Lipoprotein membranes containing various enzymes and F1 particles make _____.

- (a) Crista (b) Cisternae (c) Forming face (d) Matrix

Question No: 5 Which of the following virus is classified as ssDNA virus?

- (a) Diarrhea virus (b) Mild rash virus (c) Rubella virus (d) Small pox virus

Question No: 6 Catastrophism was explained by:

- (a) Wallace (b) Cuvier (c) Malthus (d) Darwin

Question No: 7 Plasma membrane is:

- (a) Biradially symmetrical (b) Asymmetrical
(c) Radially symmetrical (d) Bilaterally symmetrical

Question No: 8 How many valves are present in a human heart?

- (a) 2 (b) 3 (c) 4 (d) 6

Question No: 9 Among _____ substances are water, acids, bases, and salts.

- (a) chemical (b) inorganic (c) physical (d) organic

Question No: 10 Casparian strips are present in?

- (a) Endodermis (b) Cortex (c) Pericycle (d) Epidermis

Question No: 11 Which is the function associated with Golgi apparatus?

- (a) Modification of proteins and lipids (b) Protein synthesis
(c) Nerve impulse transmission (d) Detoxification of drugs

Question No: 12 Cerebrospinal Fluid (CSF) is found between:

- (a) Pia and dura mater (b) Dura and arachnoid mater
(c) Arachnoid and pia mater (d) Cranium and dura mater

Question No: 13 The butterfly shaped central part of the spinal cord is composed of special structure known as;

- (a) Grey Matter (b) White Matter
(c) Both Grey & White Matter (d) Neuroglial protein

Question No: 14 Which one is chemotherapeutic agents to destroy and stop the growth of bacterium?

- (a) Phenol (b) Spirit (c) Penicillin (d) Sulphuric acid

Question No: 15 During muscle contraction, troponin binds to all of following EXCEPT:

- (a) Actin (b) Myosin (c) tropomyosin (d) calcium

Question No: 16 With reference to female reproduction, exchange of which material is non placental?

- (a) Wastages (b) Gases (c) Blood (d) Nutrients

Question No: 17 The largest group of animal kingdom is?

- (a) Arthropoda (b) Mammals (c) Mollusca (d) Nematoda

Question No: 18 The different members of colonies in coelenterates which perform different functions are?

- (a) Workers (b) Drones (c) Zooplanktons (d) Zooids

Question No: 19 Which of the following is incorrect about lungs?

- (a) Occupy intra thoracic cavity (b) Slightly unequal in size
(c) Respiratory organ of all organisms (d) Encased in pleura

Question No: 20 Which of the following is responsible for producing "LUB DUB" sound of the Heart?

- (a) Closing of valves in heart (b) Contraction of atria
(c) Contraction of muscles (d) Contraction of ventricles

Question No: 21 What are capsomeres composed of?

- (a) Carbohydrate (b) Lipid (c) Lipoprotein (d) Protein

Question No: 22 After ovulation the ruptured follicle is transformed into a glandular mass called:

- (a) Graafian follicle (b) Corpus allatum
(c) Primary follicle (d) Corpus luteum

Question No: 23 Tristearin is a/an:

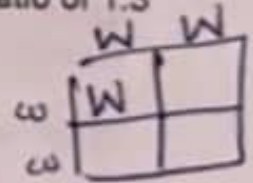
- (a) Lipid (b) Protein (c) Enzyme (d) Aminoacid

Question No: 24 What will be the F₂ phenotypic ratio if a red flower male plant is bred with a white flower female plant, where red flower color is dominant over white flower colour?

- (a) In ratio of 1:2 (b) In ratio of 1:1 (c) In ratio of 3:1 (d) In ratio of 1:3

Question No: 25 Upon hydrolysis cellulose yields:

- (a) A disaccharide called as cellulose (b) A trisaccharide called cellulose
(c) A monosaccharide called as galactose
(d) A disaccharide called as maltose



Question No: 26 HIV belongs to which group of the viruses?

- (a) DNA virus (b) DNA enveloped virus
(c) Protein tumor virus (d) RNA tumor virus

prime AC

Question No: 27
chromosome?

Which cell type does not have histone with DNA to make

- (a) Fungal cell (b) Plant cell (c) Animal cell (d) Bacterial cell

Question No: 28 Lactic acid accumulation in skeletal muscle cell causes:

- (a) Muscular atrophy
(b) Muscle cramp
(c) Muscle fatigue
(d) Muscle tetany

Question No: 29 In how many stages is the HIV infection process divided?

- (a) 1
(b) 2
(c) 3
(d) 4

Question No: 30 What is the colour of Chlorophyll-a molecules?

- (a) Bluish green
(b) Yellowish green
(c) Dark Green
(d) Reddish green

Question No: 31 The thick filament which is 16nm in diameter, is composed of?

- (a) Actin
(b) Myosin
(c) Tropomyosin
(d) Troponin

Question No: 32 Enzymes lower the activation energy by stabilizing the transition state of a metabolic reaction due to?

- (a) Changing conditions within the active site
(b) Changing conditions within the protein framework
(c) Rearranging the fatty acids in active site
(d) Distorting the molecules in the allosteric site

Question No: 33 Which among the following permit interbreeding among the individuals of same species?

- (a) Reproductive isolation
(b) Mutation
(c) Chromosomal aberration
(d) Common habitat

Question No: 34 When do anti-A and anti-B antibodies appear in plasma?

- (a) During early development (b) During first few months of life
(c) At the age of puberty (d) When exposed to wrong blood group

Question No: 35 Which of the following is NOT an event of light dependent reactions during photosynthesis?

- (a) Photolysis of water (b) Production of ATP by Photophosphorylation
(c) Reduction of Carbon dioxide (d) Reduction of NADP to NADPH

Question No: 36 What are the living cells of cartilage called?

- (a) Astrocytes (b) Chondrocytes (c) Osteocytes (d) Melanocytes

Question No: 37 In prokaryotic cell which one of the following organelle is present?

- (a) Mitochondria (b) Nucleus (c) Golgi apparatus (d) Ribosomes

Question No: 38 Phycocyanin is a pigment present in Cyanobacteria. Phycocyanin is of _____ colour.

- (a) Green (b) Blue (c) Yellow (d) Red

Question No: 39 The flow of lymph is always towards _____?

- (a) Carotid arteries (b) Iliac arteries
(c) Thoracic lymph duct (d) Thymus gland

Question No: 40 Fossil of Cro-Man was collected from;

- (a) South America (b) Great Britain
(c) Ireland (d) France

Question No: 41 NAD is a:

- (a) Mononucleotide (b) Dinucleotide
(c) Trinucleotide (d) Polynucleotide

Question No: 42 Which of the following is a viral sexually transmitted disease?

- (a) Dengue (b) Genital Herpes (c) Gonorrhea (d) Syphilis

Question No: 43 In prokaryotes the function of mitochondria is performed by which one of the following:

- (a) Mesosome (b) Periplasm ^{act as lysosome} (c) Ribosome (d) Plasmid

Question No: 44 Sterilization of blood products is carried out by?

- (a) Chemicals (b) Drying (c) Filtration (d) Radiation

Question No: 45 Which hormone controls the release of milk from the mammary glands?

- (a) Follicle-stimulating hormone (b) Progesterone
(c) Luteinizing hormone (d) Oxytocin

Question No: 46 Which of the following is a conjugated molecule?

- (a) Polysaccharides (b) Glycoproteins (c) Glycogen (d) Starch

Question No: 47 Who discovered ABO blood group systems?

- (a) Bernstein (b) Mendel (c) Landsteiner (d) Levine

Question No: 48 As water changes into vapors, _____

- (a) its molecules are more widely spaced (b) it warms the surrounding environment
(c) it cools the surrounding environment (d) it warms the surrounding environment

Question No: 49 What are nerve impulses?

- (a) Electromechanical Waves (b) Electromagnetic Waves
(c) Electromechano Waves (d) Electrochemical Waves

Question No: 50 For all life processes, which of the following is the direct source of energy?

- (a) Association of chemical bonds (b) Redox reactions
(c) Electrons (d) ATP molecules

Question No: 51 Epididymis opens into:

- (a) Vas deferens (b) Ejaculatory duct
(c) Urinogenital duct (d) Vas efferens

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Question No: 52 The phenomenon responsible for genetic variation is:

- (a) Mitosis (b) Cloning (c) Gene linkage (d) Crossing over

Question No: 53 The infundibulum connects pituitary gland to the:

- (a) Cerebellum (b) Cerebrum (c) Hypothalamus (d) Thalamus

Question No: 54 Both enzymes and coenzymes are?

- (a) Inorganic (b) Reused
(c) Derived from vitamins (d) Globular proteins

Question No: 55 Trans face of Golgi complex is a:

- (a) Forming face that consists of young cisternae
(b) Forming face that consists of old cisternae
(c) Maturing face that consists of newly built cisternae
(d) Maturing face that consists of old cisternae

5.1
5.5
5.9
6.3

Question No: 56
billion years ago?

Which of the following types of organisms first evolved about 1.5

- (a) Prokaryotes (b) Eukaryotes (c) Animals (d) Seed plants

Question No: 57 Which of the following statement is NOT true about protein?

- (a) Protein are nitrogenous compound (b) Protein are building block of tissues
(c) Protein are hydrated carbons (d) Proteins are polymers of amino acids

Question No: 58 Trace amount of vitamins are the basic natural reservoir in making _____?

- (a) Prosthetic group (b) Coenzyme (c) Cofactor (d) Activator
C-B

Question No: 59 Cyanides blocks the action of enzymes by combining with:

- (a) Calcium (b) Magnesium (c) Copper (d) Iron

Question No: 60 Action potential in neuronal membrane starts the process of:

- (a) Polarization (b) Depolarization (c) Repolarization (d) Hyperpolarization

Question No: 61 The maximum water potential of pure water is _____?

- (a) -100 (b) 0 (c) 1 (d) 100

Question No: 62 Fasciola an endoparasite in sheep mostly found in?

- (a) Blood of sheep (b) Large intestine of sheep
(c) Liver and bile duct of sheep (d) Stomach of sheep

Question No: 63 In chlorophyll a, -CH₃ group is attached to which pyrrole ring?

- (a) 1st (b) 2nd (c) 3rd (d) 4th

Question No: 64 Which of the following organelles contains circular DNA and small size ribosomes?

- (a) Nucleus (b) Mitochondria (c) Golgi complex (d) Endoplasmic reticulum

Question No: 65 Which of the following transport processes require energy for the movement of the material across the plasma?

- (a) Osmosis (b) Diffusion (c) Endocytosis (d) Facilitated diffusion

Question No: 66 Mode of inheritance in humans can be traced through:

- (a) Experimental Mating (b) Chi Square Chart
(c) Pedigree Analysis (d) Probability Analysis

Question No: 67 Animals having jointed legs and chitinous exoskeleton are known as:

- (a) Chordates (b) Arthropods (c) Annelida (d) Mollusca

Question No: 68 Passage of water across a selectively permeable membrane is called?

- (a) Active transport (b) Osmosis
(c) Pinocytosis (d) Facilitated diffusion

Question No: 69 The system in which three angles and axes are unequal is called?

- (a) Cubic system (b) Triclinic system
(c) Orthorhombic system (d) Trigonal system

Question No: 70 Which one is incorrect for actual yield is less than theoretical yield due to:

- (a) mechanical losses (b) reversibility of reaction
(c) all molecules do not possess activation energy (d) Substance is pure

Question No: 71 Which of the following is carbon atom of a Carbonyl group?

- (a) sp hybridized (b) sp² hybridized (c) sp³ hybridized (d) dsp² hybridized

Question No: 72 The acylium ion has a positive charge and act as?

- (a) Nucleophile (b) Electrophile (c) Carbocation (d) Carbanion

Question No: 73 Why first ionization energy of Beryllium is higher than Boron?

- (a) Boron has higher electronic configuration than Beryllium
(b) Atomic radius of Beryllium is smaller than Boron
(c) Beryllium has stable electronic configuration
(d) Boron has smaller atomic number than Beryllium

Question No: 74 Which one of the following have no cleavage plane?

- (a) Graphite (b) NaCl crystals (c) Copper crystals (d) Ice

Question No: 75 Which of the following metal does not react with water ?

- (a) Mg (b) Ca (c) Na (d) Be

Question No: 76 A set of postulates that explain the behavior of ideal gas is called:

- (a) Bohr theory (b) Kinetic molecular theory of gases
(c) Rutherford theory (d) Dalton's theory

Question No: 77 The general electronic configuration of halide ions is

- (a) $ns^2 . np^5$ (b) $ns^2 . np^6$ (c) $ns^1 . np^5$ (d) $ns^2 . np^3$

Question No: 78 Thermodynamically the most stable form of carbon is

- (a) Diamond (b) Graphite (c) Peat (d) Coal

Question No: 79 Protein content of human milk is about:

- (a) 1.4 % (b) 2.4 % (c) 3.4 % (d) 4.4 %

Question No: 80 Which of the following characteristic of carbonyl oxygen increases by base-catalyzed reaction?

- (a) Amphoteric (b) Nucleophilic (c) Electrophobic (d) Electrophilic

Question No: 81 Which of the following is a bidentate ligand?

- (a) Ammine (b) Hydrazine (c) Aqua (d) Carbonyl

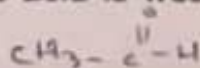
Question No: 82 What do we mean by the term 'delocalised electrons' in benzene?

- (a) Electrons that are free to move around the molecule in the pi bonding system above and below the plane of the carbon atoms in the benzene ring.
(b) Electrons that are not free to move around the molecule in the pi bonding system above and below the plane of the carbon atoms in the benzene ring.
(c) Electrons that are free to move around the molecule in the sigma bonding system above and below the plane of the carbon atoms in the benzene ring.
(d) Electrons that are free to move around the molecule in the pi bonding in the benzene ring.

Question No: 83 Which of the following pair is iso-structural?

- (a) AlCl_3 and CH_4 (b) BF_3 and NH_3 (c) SnCl_2 and BeCl_2 (d) SO_3 and BF_3

Question No: 84 Acetic acid is weak acid than sulphuric acid because of which of the following reasons?



- (a) It decomposes on increasing temperature (b) It has less degree of ionization
(c) It has $-\text{COOH}$ group (d) It has more inductive effect

Question No: 85 Number of primary carbon atoms present in isobutane is?

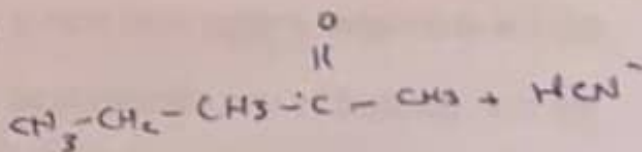
- (a) one (b) two (c) three (d) four

Question No: 86 In which method the rate of reaction involving ions can be studied?

- (a) Electrical conductivity method (b) Optical rotation method
(c) Refractometric method (d) Spectrometry

Question No: 87 Which of the following occurs when carbonyl compounds react with HCN ?

- (a) The reaction is catalysed by concentrated H_2SO_4 .
(b) Pentan-2-one and HCN react to give a chiral product.
(c) The reaction is a condensation reaction.
(d) The reaction is nucleophilic substitution.



Question No: 88 The overall charge on transition state in $\text{S}_\text{N}2$ reaction is?

- (a) Negative (b) Positive (c) Neutral (d) Partially positive

Question No: 89 Which ionic radii is the smallest one?

- (a) Na^+ (b) Mg^{++} (c) Al^{+++} (d) Mg^+

Question No: 90 What is the quantum number for the unpaired electron of chlorine atom (n, l, m)?

- (a) 2, 1, 0 (b) 2, 1, 1 (c) 3, 1, 1 (d) 3, 0, 0

Question No: 91 Group IB is called the coinage metals. Which one is not true about this group?

- (a) Have powerful reducing agents (b) Have positive reduction potential
(c) Cannot displace H_2 from dilute acids
(d) Lies below SHE in electrochemical series

Question No: 92 What is the weight of oxygen that is required for the complete combustion of 3.2 kg of methane?

- (a) 3.2 kg (b) 6.4 kg (c) 12.8 kg (d) 15.4 kg

Question No: 93

How many moles of a gas occupy 30.57 L at $55^\circ C$ and 0.83 atm?

- (a) 0.1 mol (b) 0.62 mol (c) 0.84 mol (d) 0.94 mol

Question No: 94 Which statement about a 4d orbital is correct?

- (a) It is at a higher energy level than a 4p orbital but has the same shape
(b) It is occupied by one electron in an isolated Zn atom
(c) It can hold a maximum of 10 electrons
(d) It has the highest energy of the orbitals with principal quantum number 4

Question No: 95 Hess's law states the same thing as:

- (a) Henry's law (b) Second law of thermodynamics
(c) First law of thermodynamics (d) Second law of thermochemistry

Question No: 96 Which of the following is not true about Canal rays?

Protons / positive ions

- a) 1.6726×10^{-27} kg
 b) 9.54×10^7 C/kg
 c) Show deflection under electric & magnetic fields
 d) Do not cause mechanical motion

$$e = 1.6 \times 10^{-19}$$

Question No: 97 The solubility of carboxylic acid in water gradually decreases with:

- (a) Decreases in molecular mass
 (b) Increases in molecular mass
 (c) Increases the amount of acid
 (d) Decreases the amount of water

Question No: 98 The polar part of the soap and detergents dissolve in water molecules due to:

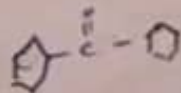
- (a) Dipole - dipole forces
 (b) Dipole - induced dipole forces
 (c) Hydrogen bonding
 (d) London Dispersion forces

Question No: 99 When equal moles of reactants A and B are allowed to react according to the following balanced equation. ($2A + B \rightarrow \text{Product}$). The limiting reactant in this chemical equation will be?

- (a) Reactant A
 (b) Reactant B
 (c) Reactant A and B
 (d) No Limiting reactant

Question No: 100 The hydrocarbon which has isolated rings and is aromatic?

- (a) Phenanthrene
 (b) Triphenylmethane
 (c) Diphenylether
 (d) Anthracene



Question No: 101 Which functional group is characteristics of ester?

- (a) R-OH
 (b) R-CO-R
 (c) R-CO-OR
 (d) R-CO-OH

Question No: 102 Which of the following acids has the smallest dissociation constant?

- (a) $\text{CH}_3\text{CHFCOOH}$ (b) $\text{FCH}_2\text{CH}_2\text{COOH}$
(c) $\text{BrCH}_2\text{CH}_2\text{COOH}$ (d) $\text{CH}_3\text{CHBrCOOH}$

Question No: 103 At room temperature, Glycerin boils at 290°C . What is the boiling point of glycerin under vacuum distillation at 50 torr?

- (a) 320°C (b) 310°C (c) 300°C (d) 210°C

Question No: 104 The solubility of KClO_3 is decreased by adding:

- (a) KCl (b) KClO_3 (c) H_2O (d) Not effected

Question No: 105 For every reaction occurring in human body there is at least one type of:

- (a) Vitamin (b) Enzyme (c) Protein (d) Amino acid

Question No: 106 Why do transition elements form alloys so easily?

- (a) Atomic size (b) Orbital configuration
(c) Very light (d) Hard elements

Question No: 107 Methanol is prepared from carbon monoxide and hydrogen. The catalyst used for this reaction is?

- (a) $\text{ZnO} + \text{CoO}_2$ (b) $\text{ZnO} + \text{CuO}$
(c) $\text{ZnO} + \text{Ag}_2\text{O}$ (d) $\text{Cr}_2\text{O}_3 + \text{ZnO}$

Question No: 108 Which of the following statement is true about Grignard reagent (RMgX)?

- (a) RMgX is prepared in aqueous medium (b) RMgX is prepared in ether
(c) RMgX does not react with water (d) RMgX inactive in ethanol

Question No: 109 Air at sea level is dense. This is practical application of:

- (a) Boyles law (b) Charles law (c) Avogadros law (d) Daltons law

Question No: 110 Which of the following acid can show cis-trans isomerism ?

- (a) Malonic acid (b) Maleic acid (c) Succinic acid (d) Lactic acid

Question No: 111 What is the reactivity state of Phenols?

- (a) Less reactive (b) More reactive (c) Neutral (d) Nonreactive

Question No: 112 Why do electrons have opposite spins when they are in the same orbital?

- (a) This condition reduces friction (b) This condition creates more energy
(c) This condition results in zero magnetism and removes the charge of the electron
(d) This condition results in less repulsion and opposite magnetic fields

Question No: 113 Which of the following is not an endothermic reaction?

- (a) Combustion of methane (b) Decomposition of water
(c) Dehydrogenation of ethane or ethylene (d) Conversion of graphite to diamond

Question No: 114 Which order of reaction obeys the expression $t_{1/2} = 1/K_a$?

- (a) zero (b) First (c) Second (d) Third

Question No: 115 What is the common name of 1,2,3-propanetriol?

- (a) Butyl alcohol (b) Glycol (c) Glycerol (d) Propyl alcohol

Question No: 116 When aqueous solution of NaCl is electrolysed,

- (a) Cl_2 is evolved at the cathode (b) H_2 is evolved at cathode
(c) Na^+ is deposited at the cathode (d) Na appears at the anode

Question No: 117 The equilibrium stage that is not affected by temperature is called?

- (a) Static equilibrium (b) Natwal equilibrium
(c) Dynamic equilibrium (d) Unstable equilibrium

Question No: 118 Which of the following carbon atom is sp^2 hybridized?

- (a) Cyclopropane (b) Diamond (c) Graphite (d) Hexane

Question No: 119 Sp^2 hybrid carbon atom is present in:

- (a) Methanal (b) Methanol (c) Ethanol (d) Propanol
- CH_3-OH CH_3-CH_2-OH CH_3-CH_2-OH

Question No: 120 What is the fact due to which the branching decreases boiling point?

- (a) As branching increases the attractive forces between molecules
(b) As branching increases it decreases attractive forces
(c) As branching increases it increases surface area for making attractive forces
(d) As branching increases it decreases the surface area for attractive forces

Question No: 121 Temperature increase in an exothermic reversible reaction, shift the equilibrium to:

- (a) Product side (b) Reactant side
(c) Remains unchanged (d) Increase in both

Question No: 122 Which product is formed when $RMgX$ reacts with CO_2 ?

- (a) Aldehyde (b) Ketone
(c) Carboxylic acid (d) Ethers

CH_3

CH_3

HOH^-

OH

Question No: 123 The minimum gradient of a curve on a displacement-time graph of a ball thrown vertically upwards and caught back at the same point after falling down can be:

- (a) Zero (b) 9.81 (c) 90 degree (d) Equal to final velocity of the motion

Question No: 124 Coulomb's law is only true for point charges whose sizes are:

- (a) Medium (b) Very large (c) Very small (d) Large

Question No: 125 The magnetic field depends upon:

- (a) Strength, mass and nature of magnetic materials
(b) Strength, mass and direction
(c) Strength, distance and direction (d) Strength, mass and distance

Question No: 126 When a gas is compressed isothermally, the product of its pressure and volume during the process is:

- (a) not constant (b) constant (c) zero (d) proportional to entropy

Question No: 127 Which one of the following bulbs has the least resistance, if the current is kept constant?

- (a) 100 watt (b) 200 watt (c) 300 watt (d) 400 watt

Question No: 128

A coil of area 1 m^2 has 100 turns. It rotates with constant angular velocity about an axis along its diameter perpendicular to earth's magnetic field of $1 \times 10^{-5} \text{ T}$. The angular velocity for induced emf of 1 mV is?

- (a) Zero (b) 1 rad/s (c) 7.96 rad/s (d) 10 rad/s

Question No: 129 When the transverse wave passes, the particles of the medium oscillate:

- (a) With different harmonics (b) With different frequencies
(c) Parallel to the direction of wave travel
(d) Perpendicular to the direction of wave travel

Question No: 130 A capacitor is charged with a battery and energy stored is U . After disconnecting battery another capacitor of same capacity is connected in parallel to the first capacitor. Then energy stored in each capacitor is

- (a) $U/2$ (b) $U/4$ (c) $4U$ (d) $2U$

Question No: 131 If the value of acceleration due to gravity ' g ' is reduced to half, the time of flight ' T ' of projectile becomes:

- (a) $T/2$ (b) $T/4$ (c) $2T$ (d) $4T$

Question No: 132 Which of the following has the largest energy?

- (a) A photon of wavelength 1 nm (b) A photon of wavelength $50 \text{ } \mu\text{m}$
 (c) A photon of wavelength $2 \text{ } \mu\text{m}$ (d) A photon of wavelength 200 nm

Question No: 133 How much energy is converted in a resistor of 5 ohm carrying a current of 2.0 after 10 seconds?

- (a) 4.0 J (b) 25 J (c) 100 J (d) 200 J

Question No: 134 The longest wavelength of Lyman series is equal to?

- (a) $1 / RH$ (b) $4 / 3 RH$ (c) $9 / RH$ (d) $144 / 7RH$

Question No: 135 What is the SI unit of conductivity?

- (a) $\text{Ohm}^{-1} \text{ m}$ (b) mho m^{-1} (c) seimen m (d) $\text{mho}^{-1} \text{ m}^{-1}$

Question No: 136 The angle subtended at the center of a circle by an arc equal to $1/60$ th of a degree is called:

- (a) One minute (b) One radian (c) One second (d) One steradian

Question No: 137 The magnetic flux through an area A in a uniform magnetic field B is given as:

- (a) $B.A$ (b) $BA \sin\theta$ (c) $BA \cos 2\theta$ (d) $BA \tan\theta$

$R = \frac{\rho L}{A}$
 $\rho = \frac{RA}{L} = \text{ohm} \cdot \text{m}^2$

$R = 5$
 $I = 2$
 $t = 10 \text{ s}$
 $E =$

Question No: 138 High-frequency vibration is of:

- (a) 10 kHz
- (b) 0.1 MHz
- (c) 1 kHz
- (d) 1000Hz

Question No: 139 Electric field lines are:

- (a) actual lines
- (b) imaginary lines
- (c) straight lines
- (d) always curve lines

Question No: 140 In British Engineering system, 1 Horse Power is:

- (a) 550 ft Pound/sec
- (b) 746 ft Pound/sec
- (c) 550 watt
- (d) 550 kilowatt hour

Question No: 141 Two point charges, each of magnitude q are separated by a distance $2d$. At a point mid-way between:

- (a) $E = 0, V = 0$
- (b) $E \neq 0, V = 0$
- (c) $E = 0, V \neq 0$
- (d) $E \neq 0, V \neq 0$

Question No: 142 A low energy neutron has RBE factor of 10. How much energy is absorbed by a man of mass 80 Kg, if the value of equivalent dose is 400 rem?

- (a) 16 J
- (b) 32 J
- (c) 48 J
- (d) 64 J

Question No: 143 A circuit that converts pulsating voltage of the rectifier to smooth voltage is known as:

- (a) Generator
- (b) Transformer
- (c) Filter
- (d) Choke

Question No: 144 An object of mass 'm' moving with speed 'v' has a head-on collision with another object of mass 'm' moving with speed 'v' in the opposite direction. The two objects stick together after the collision. What is the total loss of kinetic energy after the collision?

- (a) $\frac{1}{2}mv^2$
- (b) mv^2
- (c) $2mv^2$
- (d) $4mv^2$

Question No: 145

If C_v denotes molar specific heat at constant volume and ΔT is the change in temperature, then $C_v \Delta T$ gives:

- (a) volume (b) pressure (c) Internal energy (d) entropy

Question No: 146 If the initial velocity 'u' of the projectile is doubled, height 'H' of the projectile becomes:

- (a) $H/2$ (b) $H/4$ (c) $2H$ (d) $4H$

Question No: 147 A step down transformer is used to light a 12 volt 24 mA lamp from the 240 mains the current through primary is 1.5 mA. What is the efficiency of the transformer?

- (a) 60 % (b) 70 % (c) 80% (d) 90%

Question No: 148 An oscillator performing simple harmonic motion has a displacement x given by the equation $x = 8.0(\text{mm}) \sin(10\pi/3)t$. What is the displacement when $t = 0.05\text{s}$?

- (a) 4 mm (b) $4\sqrt{2}$ mm (c) $4\sqrt{3}$ mm (d) 8 mm

Question No: 149 According to the wave-particle duality, identify respectively how all micro-particles (electrons, protons, atoms, etc) behave when propagating and when exchanging energies.

- (a) Waves, particles (b) Particles, waves
(c) Particles, particles (d) Waves, waves

Question No: 150 A solenoid of length 10 cm has magnetic flux density $B = 0.50\text{T}$. When there is free space inside its turns. When the same solenoid is wound on iron core then its flux density is increased by:

- (a) 14 times (b) 140 times (c) 7 times (d) Remains Same

Handwritten calculations:
 $65 \sqrt{120}$
 $195 / 500$
 $65 \sqrt{3}$
 195
 365
 6
 90
 65
 $P = I^2 R$
 $=$

Question No: 151 Angular displacement is a vector quantity only when the _____?

- (a) time of a circular motion is large enough
- (b) Time of circular motion is small enough
- (c) Time of circular motion has no effect
- (d) Time of circular motion is moderate

Question No: 152 Volt can also be written as ?

- (a) JC^{-2}
- (b) JC
- (c) JC^{-1}
- (d) CJ^{-1}

Question No: 153 A low voltage supply with an e.m.f. of 20 V and an internal resistance of 1.5 ohms is used to supply power to a heater of resistance 6.5 ohms in a fish tank. What is the power supplied to the water in the fish tank?

- (a) 41 W
- (b) 50 W
- (c) 53 W
- (d) 62 W

Handwritten calculations:
 $V = 20V$
 $r = 1.5 \Omega$
 $R = 6.5 \Omega$

Question No: 154 When a nucleus emits beta particle, its mass number remains constant but charge number increases by:

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Handwritten calculations:
 $P = V^2 R$
 $= I^2 R$

Question No: 155 The direction of centripetal acceleration in a circle?

- (a) Parallel to the centripetal force
- (b) Opposite to the centripetal force
- (c) Tangent to the circle
- (d) Parallel to the circle

Handwritten calculations:
 $P = I^2 R$
 $= 20$

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constant of an RC circuit during discharge is that time in which charge on plates, as compared to maximum charge (q_0) becomes

- (a) 25 percent
- (b) 36.6 percent
- (c) 50 percent
- (d) 63.3 percent

Handwritten calculation:
 $V = IR$

Handwritten calculation:
 $65 \sqrt{200}$

Question No: 157 Doppler effect can be observed by:

- Longitudinal waves
- Electromagnetic waves
- Both longitudinal and electromagnetic waves
- Sound only

Question No: 158 The induced emf in a coil is 1 V. What will be the rate of change of area of that coil placed in a constant magnetic field of strength 0.1T ?

- (a) $0.1 \text{ m}^2\text{s}^{-2}$
- (b) $0.01 \text{ m}^2\text{s}^{-2}$
- (c) $1 \text{ m}^2\text{s}^{-2}$
- (d) $10 \text{ m}^2\text{s}^{-2}$

Question No: 159 Work done on a rod moving in a magnetic field across magnetic field and generate an emf in the system. This statement is according to lenzs law of conservation of?

- (a) Mass
- (b) Momentum
- (c) Density
- (d) Energy

Question No: 160 De Broglie received the Nobel Prize in the year:

- (a) 1905
- (b) 1927
- (c) 1929
- (d) 1937

Question No: 161 Time of flight of a projectile depends upon:

- (a) Launch angle only
- (b) Launch speed only
- (c) Launch speed and its angle
- (d) Launch height only

Question No: 162 Which of the following is NOT CORRECT about potentiometer?

- (a) It measures the emf of a cell very accurately
- (b) Its sensitivity is low
- (c) It is based on null deflection method
- (d) Its sensitivity is high

Question No: 163 Work done in raising a box depends on:

- (a) How fast it is raised
- (b) The strength of the person raising the box
- (c) The height it is raised to
- (d) The weight of the box and the height it is raised to

Question No: 164 In earth's gravitational field, the absolute potential at any point in space is:

- (a) $(G M_e) / 2R_e$
- (b) $(G m M_e) / R_e^2$
- (c) $(G M_e) / R_e$
- (d) $(G m M_e) / R_e$

Question No: 165 What physical quantity would result from a calculation in which a potential difference is multiplied by an electric charge?

- (a) electric current
- (b) electric energy
- (c) electric field strength
- (d) electric power

Question No: 166 Kinetic energy is product of two vectors. It is:

- (a) Dot product of velocities
- (b) Cross product of velocities
- (c) Dot product of mass and velocity
- (d) Cross product of mass and velocity

Question No: 167 Which one is a variable capacitor?

- (a) Ceramic trimmer capacitor
- (b) Air gap capacitor
- (c) Variable capacitor
- (d) Silver capacitor

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Question No: 177

Which of the following is a correct sentence?

- (a) Work all day, my father doesn't have much time to spend.
- (b) Working all day, my father don't have much time to spend.
- (c) Working all day, my father doesn't have much time to spent.
- (d) Working all day, my father doesn't have much time to spend.

Question No: 178

Complete the sentence with the correct pronoun.

- Neither she nor _____ am guilty.
- (a) us
 - (b) we
 - (c) I
 - (d) me

Question No: 179

Choose the sentence that follows the correct adjectives.

- (a) A beautiful blue sailing boat.
- (b) A blue beautiful sailing boat.
- (c) A beautiful sailing blue boat.
- (d) A blue sailing beautiful boat.

Question No: 180

He is extremely alert and watchful like _____ cat.

- (a) a
- (b) an
- (c) the
- (d) no article required

Question No: 181

I will not tolerate his rudeness.

- (a) The sentence that means the same as above sentence.
- (b) Not put up for his rudeness.
- (c) Not put up with his rudeness.
- (d) Not put up to his rudeness.
- (e) Not put up by his rudeness.

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The boys on the opposite made me _____ the bird.

- (a) kills
- (b) kill
- (c) kill
- (d) killed

For each of the following, choose the sentence with correct semi

- Question No: 183
 The pen was expensive, still I bought it.
 The pen was expensive still; I bought it.
 The pen; was expensive still I bought it.
 The pen was expensive; still I bought it.

- Question No: 184 Choose a synonym for the word in capital letters.
 The VICISSITUDES of life are unexpected, nothing remains the same.
 (a) Changes (b) Evils (c) Mistakes (d) Rules

- Question No: 185 Choose the correct option.
 You will have to catch the morning flight, so you _____ better get ready.
 (a) would (b) may (c) should (d) had

- Question No: 186 The most appropriate antonym for "abridge" is:
 (a) condense (b) lengthen (c) shorten (d) reduce

- Question No: 187 Which of the following is correct?
 (a) Forty years seems a long time. (b) Forty years seem long time.
 (c) Forty years seems long time. (d) Forty years seem a long time.

- Question No: 188 A boy is waiting for you for a long time.
 In this sentence the word 'boy' is?
 (a) Proper noun (b) Common noun (c) Abstract noun (d) Collective noun

- Question No: 189 I expect you _____ from college by this time next year and will
 be looking for a job.

- Fill in the blank with the most appropriate choice:
 _____ will graduate
 _____ will graduated
 (b) will be graduating
 (d) will have graduated

Question No: 190 The melody is _____ not energetic like
The most appropriate word to be filled in is:
(a) plaintive (b) baffling (c) blissful

Question No: 191 There were five active workers and three lazy
Which part of the sentence carries error:
(a) There were (b) five active workers
(c) in the factory (d) and three lazy one

Question No: 192 Choose the correct option to complete the given sentence
A lion is to a pride as a goose is to a _____
(a) feather (b) flock (c) gander (d) pod

Question No: 193 Neither the invaders who were invading _____ the people
were being invaded really understood what was happening.
Fill in blank with the correct word:
(a) or (b) nor (c) not (d) none

Question No: 194 Choose the sentence with appropriately structured phrase
(a) They got married on dull, sunny day in June.
(b) They got married on cloudy, sunny day in June.
(c) They got married on a bright, sunny day in June.
(d) They got married on damp, sunny day in June.

Question No: 198 Observe the pattern and select the ne
TEAM, TAME, TMEA, _____
(a) MUET (b) TEAM (c) TAUM

Question No: 199
I. The glaciers at the poles of the earth are melting at a fast rate.
II. In recent times there has been a substantial increase in the in
and volcanic eruptions.
(a) Statement (I) is the cause and statement (II) is its effect
(b) Statement (II) is the cause and statement (I) is the effect
(c) Both the statements (I) and (II) are independent causes
(d) Both the statements (I) and (II) are effects of independent causes

Question No: 200 Read the following statement, assuming everything
Then decide which of the given suggested courses of action logically follow
worth pursuing.
Statement: An invigilator catches a student peeking at another student's w
school exam.
Courses of Action:
I. Immediately cancel both of the students' exams and remove them from the
II. Change the student's position to one which is more secluded and give them
warning.
(a) I and II (b) II (c) I (d) Neither I nor II

MDCAT-2023 Answer Key (Green)

Q.NO.	Corr Ans	Q.NO.	Corr Ans	Q.NO.	Corr Ans	Q.NO.	Corr Ans
1	B	51	A	101	C	151	B
2	C	52	D	102	C	152	C
3	D	53	C	103	D	153	A
4	A	54	B	104	A	154	A
5	B	55	D	105	B	155	A
6	D	56	B	106	A	156	B
7	B	57	C	107	D	157	C
8	C	58	B	108	B	158	D
9	B	59	D	109	A	159	D
10	A	60	B	110	B	160	C
11	A	61	B	111	A	161	C
12	C	62	C	112	D	162	B
13	A	63	B	113	A	163	D
14	C	64	B	114	C	164	D
15	B	65	C	115	C	165	B
16	C	66	C	116	B	166	A
17	A	67	B	117	C	167	A
18	D	68	B	118	C	168	C
19	C	69	B	119	A	169	B
20	A	70	D	120	D	170	D
21	D	71	B	121	B	171	C
22	D	72	B	122	C	172	B
23	A	73	C	123	A	173	B
24	C	74	C	124	C	174	A
25	A	75	D	125	C	175	B
26	D	76	B	126	B	176	B
27	D	77	B	127	C	177	C
28	C	78	B	128	B	178	C
29	C	79	B	129	D	179	A
30	A	80	B	130	B	180	A
31	B	81	B	131	C	181	B
32	A	82	A	132	C	182	C
33	D	83	D	133	D	183	D
34	B	84	B	134	B	184	A
35	C	85	C	135	B	185	C
36	B	86	A	136	A	186	B
37	D	87	B	137	A	187	A
38	B	88	A	138	B	188	B
39	C	89	C	139	B	189	D
40	D	90	C	140	A	190	A
41	B	91	A	141	C	191	D
42	B	92	C	142	B	192	B
43	A	93	D	143	C	193	B
44	C	94	C	144	C	194	C
45	D	95	C	145	C	195	C
46	B	96	D	146	D	196	A
47	C	97	B	147	C	197	C
48	D	98	C	148	A	198	B
49	D	99	A	149	A	199	D
50	B	100	B	150	B	200	B