Q1. Example of viruses having a polyhedral capsid that is with 252 capsomeres is:

A. Adenovirus

C. Influenza virus

B. Tobacco Mosaic Virus

D. Bacteriophage

Q2. The complete, mature & infectious particle of virus is known as:

A. Genome

C. Prion

B. Capsomere

D. Envelope

Q3. The causative organism of measles is:

A. Poxvirus

C. Picornovirus

B. Papovirus

D. Paramyxovirus

Q4. In the life cycle of a bacteriophage, the lysozymes are required in which of the following steps of infection process?

A. Genome Injection

C. Replication

B. Penetration

D. Adsorption

Q5. HIV is transmitted through infected blood and hypodermic syringes:

A. Influenza Virus

C. Morbilli Virus (Measles)

B. Campylobacter jejuni

D. Vibrio Cholerae (Cholera)

Q6. In Calvin cycle CO_2 reacts with RuBP to produce:

A. 3-PGA

C. 6-Carbon unstable intermediate

B. G3P

D. 1,5-bisphosphoglycerate

Q7. Which option is correct about a chlorophyll molecule?

A. Comical formula $C_{55}H_{72}O_5N_4Mg$

C. Methyl group on first pyrrole ring

B. Methyl group on second pyrrole ring

D. Aldehyde group on second pyrrole ring

Q8. The porphyrin ring with nitrogen in photosystem II to photosystem I plastocyanin is reduced by:

A. Plastoquinone

C. P700

B. Cytochrome complex

D. Reducing Ferredoxin

Q9. Enzyme NADP reductase is responsible for:

A. Reducing $NADP^+$

C. Reducing Ferredoxin

B. Oxidizing NAD^+

D. Reducing P700

Q10. The PS II during light splitting reactions receives electrons from splitting:

A. Water

C. Plastocyanin

B. Plastoquinone

D. Ferredoxin

Q11. Mono-saccharides have a general formula represented by:

A. CH_2O

C. $C_6(H_2O)_6$

B. $C_6(H_2O)_5$

D. $C_6(H_2O)_5n$

Q12. What is the percentage of H_2O in bone cells?

A. 70 %

C. 90 %

B. 80 %

D. 60 %

Q13. When glycerol reacts with fatty acid, which type of bond will form?

A. Ester Bond

C. Ionic Bond

B. Hydrogen Bond

D. Covalent Bond

Q14. Polysaccharides in plants are synthesized by the process of:

A. Hydrolysis

C. Condensation

B. Oxidation

D. Glycolysis

Q15. Which of the following process is involved in breakdown of protein into Amino acids?

A. Condensation

C. Glycolysis

B. Hydrolysis

D. Fixation

Q16. The hydrophilic end of phospholipid molecule is polar because of the presence of:

A. Glycerol

C. Fatty Acid

B. Amine group

D. Phosphate group

Q17. Which monosaccharide will from a gluco pyranose ring in solution?

A. Fructose

C. Ribose

B. Glucose

D. Deoxyribose

Q18. Chloroplast are membrane bound bodies containing:

A. Enzymes

C. Pigment

B. Cristae

D. Cisternae

Q19. Which of the following is the function of Golgi Complex?

A. Intracellular digestion

C. Autolysis

B. Autophagy

D. Processing of cell secretions

Q20. The nucleus takes dyes due to the presence of:

A. Chromatin

C. Metal ions

B. Lipid

D. Thylakoids

Q21. The organelles only found at seeding stage in oil seed plants are:

A. Peroxisomes

C. Microbodies

B. Glyoxisomes

D. Vacuoles

Q22. Posterior lobe of pituitary produce:

A. Antidiuretic Hormone (ADH)

C. Adreno Corticotrufic Hormone (ACH)

B. Thyroid Stimulating Hormone (TSH)

D. Follicle Stimulating Hormone (FSH)

Q23. An in human myelinated fibers nerve impulse travels at ____ meters per second.

A. 100-120

C. 160-180

B. 130-150

D. 190-210

Q24. Nissl's granules are groups of:

A. Mesosomes

C. Chromosome

B. Ribosomes

D. Lysosomes

Q25. During non-conducting state, the neuron membrane is permeable to efflux of:

A. K⁺

C. Ca²⁺

B. Na⁺

D. Cl⁻

Q26. Which of the following neurotransmitters is lying outside the central nervous system?

A. Acetylcholine

C. Dopamine

B. Endorphins

D. Gamma - aminobutyric acid

Q27. Depolarization during conduction of nerve impulse is due to:

A. Inward movement of Na⁺

C. Outward movement of K⁺

B. Inward movement of K⁺

D. Outward movement of Na⁺

Q28. Which of the following is NOT a feature of Autonomic Nervous System?

A. Regulate response of visceral organs

C. Regulate response of glands

B. Regulate response of skeletal muscles

D. Regulate response of smooth muscles

Q29. Taste receptor is an example of:

A. Mechano receptors

C. Photo receptors

B. Nociceptors

D. Chemo receptors

Q30. Which of the following belongs to chordates:

A. Spider

C. Trout Fish

B. Earthworm

D. Star Fish

Q31. Which of the following statement is incorrect regarding rate of enzymatic action:

A. Increase in enzyme concentration increases the rate

B. All enzymes work at their maximum rate at optimum temperature

C. All enzymes work at their maximum rate at optimum pH

D. Increase in enzyme concentration reduces the rate

Q32. Induced fit model of enzyme activity suggests that an enzyme:

A. Cannot modify its active sites

B. Can bind to a single substrate

C. Can catalyze related reaction

D. Usually belongs to non-regulatory enzyme

Q33. Chromosomal abnormality in Turner syndrome is represented by?

A. XX

B. XXY

C. XO

D. XXX

Q34. The change in frequency of alleles at a locus that occurs by chance is known as:

A. Mutation

B. Genetic Drift

C. Non Random mating

D. Speciation

Q35. Identify the correct pair of vestigial organs:

A. Ear Muscles & Vermiform appendix

B. Heart & Liver

C. Ear Muscles & Liver

D. Vermiform appendix & Heart

Q36. Which of the following increases variation within a gene pool?

A. Chromosome inversion

B. Crossing over

C. Gene mutation

D. Random fusion of gametes

Q37. Which of the following statements about natural selection is not true?

A. It affects variations that are heritable

C. It can improve the adaptation of species

B. It is selected by a breeder

D. It is regional in nature

Q38. The formula calculating the frequency of genotypes and alleles in a population gene pool is known as:

A. Hardy-Weinberg Equation

C. Darwin Equation

B. Lamarck Equation

D. James Equation

Q39. The idea of inheritance of acquired characteristics was presented by:

A. Jean Baptiste Lamarck

C. Alfred Wallace

B. Charles Darwin

D. Darwin and Mendel

Q40. According to endosymbiosis theory, flagella may have derived by the ingestion of:

A. Amoeboid prokaryote

C. Spirochete

B. Aerobic bacterium

D. Spirillum

Q41. Insulin converts glucose into:

A. Vitamins

C. Lipids

B. Minerals

D. Cortisone

Q42. About 70% of the carbon dioxide is carried in blood as:

A. Carbonate

C. Tricarbonate

B. Bicarbonate

D. Carbonic anhydrase

Q43. The normal total lung capacity in humans is:

A. 3-5 liter

C. 10-11 liter

B. 6-8 liter

D. 12-13 liter

Q44. Respiration in Pseudomonas bacteria is:

A. Aerobic

C. Facultative

B. Anaerobic

D. Microaerophil

Q45. Autotrophic mode of nutrition in organism depends upon:

A. Saprotrophic mode

C. Photosynthesis mode

B. Parasitic mode

D. Obligate mode

Q46. Prokaryotic cells lack:

A. Ribosomes

C. Membrane-bound organelles

B. Mesosomes

D. Storage bodies

Q47. Bacterial genome becomes diploid:

A. After fertilization of gametes

C. During binary fission

B. Before spore formation

D. After binary fission

Q48. One of the following is CORRECT regarding flagella:

A. Made up of macrofilaments

C. Originates from basal bodies

B. Contains centriole

D. They are immotile

Q49. Which option is CORRECT about endospore?

A. Has a short dormant period

C. Metabolically active

B. Contains moisture for survival

D. Endures extreme condition

Q50. Bacteria divide at exponential rate during which growth phase?

A. Lag

C. Stationary

B. Log

D. Decline

Q51. Mesosomes are the invagination of bacterial cell structure:

A. Cell wall

C. Plasmid

B. Cell membrane

D. Cysts

Q52. Female all reproductive system consists all of the following EXCEPT:

A. Ovaries

C. Cervix

B. Uviduct

D. Seminiferous tubules

Q53. Which one of the following hormone is responsible for the labor pains in human female at the time of birth of baby?

A. Estrogen

C. Oxytocin

B. Progesterone

D. Corticosteroid

Q54. Fluid secreted by sertoli cells provides liquid medium, protection and nourishment to:

A. Oocyte

C. Polar body

B. Sperms

D. Spermatogonium

Q55. Corpus luteum during female reproductive cycle produces:

A. Testosterone

C. Luteinizing Hormone

B. Follicle stimulating hormone

D. Progesterone

Q56. Due to the process of follicle atresia:

A. Follicles reach maximum size

C. Graafian follicle ovulates

B. Follicle degenerates

D. Follicle starts to mature

Q57. Main function of the epididymis is to:

A. Transport sperms

C. Produce semen

B. Connect with urethra

D. Hold the process of spermatogenesis

Q58. Immediate next stage of spermatogonia differentiation is:

A. Secondary spermatocyte

C. Primary spermatocytes

B. Spermatids

D. Sperms

Q59. Which of the following is included in paired cranial bones?

A. Temporal

C. Frontal

B. Occipital

D. Vomer

Q60. Which of the following skeletal disorder is an example of autoimmune disorder?

A. Sciatica

C. Rheumatoid arthritis

B. Spondylosis

D. Rickets

Q61. Which feature is possessed by smooth muscles?

A. Voluntary

C. Uni-nucleate

B. Branched

D. Striated appearance

Q62. The accumulation of 'lactic acid' in the muscles results in:

A. Extreme fatigue

C. Paralysis

B. Muscle contraction

D. Convulsion

Q63. Thick filaments in skeletal muscles are composed of:

A. Actin

C. Tropomyosin

B. Myosin

D. Troponin

Q64. Sarcomere is part of myofibril between:

A. Two I bands

C. Two M lines

B. Two A bands

D. Two Z lines

Q65. Medulla Oblongata is a part of:

A. Forebrain

C. Hind brain

B. Mid brain

D. Hippocampus

Q66. Which of the following is NOT a bone of upper limb?

A. Humerus

C. Femur

B. Ulna

D. Radius

Q67. Bone forming cells are:

A. Osteoblasts

C. Osteoclasts

B. Osteocytes

D. Osteons

Q68. The chromosomes was first observed by:

A. T. H Morgan

C. Walther

B. Griffith

D. Mendel

Q69. Number of moles in an element is directly proportional to:

A. Mass of an element

C. Empirical formula mass

B. Molar mass of an element

D. Formula mass

Q70. The type and relative amount of each isotope in an element can be found by:

A. R spectrosocopy

C. Mass Spectrometry

B. UV spectroscopy

D. N.M.R

Q71. The atomic masses of element depend upon:

A. Atomic number

C. Number of isotopes & their abundance

B. Number of electrons

D. None of the above

Q72. No individual atom in the sample of 1 mole of Neon has a mass of 20.18 a.m.u. because it:

A. Overall mass of an isobar

C. It is molar mass of Ne

B. Is a fractional mass

D. Average atomic mass of Ne

Q73. The p orbital has:

A. 2 lobes

C. 4 lobes

B. 3 lobes

D. 5 lobes

Q74. Which of the correct for electronic configuration is for carbon?

A. $1s^2 2s^2 2p^2$

C. $1s^2 2s^2 2p^4$

B. $1s^2 2s^2 2p^3$

D. $1s^2 2s^2 2p^1$

Q75. Intermolecular forces between molecules of ideal gas are:

A. Strong

C. Weak

B. Moderate

D. Absent

Q76. The correct ideal gas equation is:

A. $pV=nRT$

C. $pV=nrRT$

B. $pV=nReT$

D. $V=nRT/p$

Q77. The real gases show deviation from ideal behavior at:

A. Low temperature and low pressure

C. Low temperature and high pressure

B. High temperature and high pressure

D. High temperature and low pressure

Q78. In order to boil water at 110°C, external pressure should be:

A. 200 - 760 torr

C. 665-670 torr

B. 760 - 1200 torr

D. 660-700 torr

Q79. Which one of the following DO NOT have tendency to form hydrogen bonding?

A. Ammonia

B. Ethyl alcohol

C. Carboxylic acid

D. Hydrocarbon

Q80. Boiling point of a liquid is a temperature at which:

A. Surface tension is greater than the atmospheric pressure

B. Viscosity is less than the atmospheric pressure

C. Vapour pressure equals the atmospheric pressure

D. Viscosity equals the atmospheric pressure

Q81. Whenever the crystalline solids are broken they do so along definite planes known as:

A. Cleavage planes

B. Refractory planes

C. Sagittal planes

D. Coronal planes

Q82. One of the following is NOT an example of amorphous solids:

A. Plastic

B. Glass

C. Glucose

D. Rubber

Q83. In graphite the carbon atoms are arranged in which of the following structure?

A. Rhombic

B. Hexagonal

C. Tetragonal

D. Trigonal

Q84. The principle that states that if a stress is applied to a system at equilibrium the system nullify the effect of stress as far as possible is:

A. Haber's

B. Le Châtelier

C. Boyle's

D. Charles

Q85. Identify the CORRECT option required for the maximum yield of ammonia by Haber's process:

A. High pressure low temperature continual removal of ammonia

B. Low pressure low temperature continual removal of ammonia

C. High pressure high temperature addition of ammonia

D. High pressure low temperature addition of ammonia

Q86. Consider the following reaction in equilibrium and tell addition of which chemical will turn the cloudy solution into clear solution?

A. $BiCl_3 + H_2O \rightleftharpoons BiOCl + 2HCl$

B. HCl

C. BiOCl

D. HCl

Q87. Identify the correct formula to calculate rate of reaction:

A. Change in concentration of substance ÷ Time taken for the change

B. Time taken for the change ÷ Change in concentration of substance

C. Time taken for the change + Change in concentration of substance × 100

D. Change in concentration of substance × Time taken for the change ÷ Concentration of substance

Q88. Consider the hypothetical equation $AA + BB \rightarrow CC + DD$: Which of the following represents correct rate equation?

A. Rate = k[A][B]

B. Rate = k[A][B]^b

C. Rate = k[A]^a

D. Rate = k[B]^2

Q89. If a reaction rate does not change with concentration then it is:

A. 3rd order

C. 1st order

B. 2nd order

D. Zero order

Q90. Which of the following is CORRECT Arrhenius equation?

A. $K = A e^{-Ea/RT}$

C. $K = A e^{-Ea/ST}$

B. $K = A e^{-Ea/RT}$

D. $K = A e^{-Ea/UT}$

Q91. In endothermic reaction, the heat content of the:

A. Reactants and products is equal

C. Products is more than that of reactants

B. Reactants is more than that of products

D. Reactants & Products will not change

Q92. All of the following steps are used to calculate the lattice energy in Born-Haber cycle EXCEPT:

A. Atomizing the metal

C. Deionize the metal

B. Ionizing the metal

D. Ionize non metal

Q93. The enthalpy change when 1 Mole of water is formed by the reaction of acid with an alkali under standard conditions is known as:

A. Enthalpy of formation

C. Enthalpy of combustion

B. Enthalpy of reaction

D. Enthalpy of neutralization

Q94. Oxidation number of 'Mn' in $KMnO_4$ is:

A. 0

C. -7

B. 1

D. 7

Q95. Which step is irrelevant with respect to balancing redox equations by oxidation number method?

A. Split the reaction into two half reactions

C. Identify the element undergoing a change in oxidation number

B. Assign oxidation number to all the atoms involved in the equation

D. Equalize the number of electrons lost and gained

Q96. Which of the following is NOT a correct feature of galvanic cells?

A. Reduction occurs at cathode

C. Alternating current source is connected to electrodes

B. Oxidation occurs at anode

D. Electrochemical reaction takes place

Q97. Which of the following has a coordinate bond?

A. NaCl

C. NH_4BF_4

B. CaO

D. H_2O

Q98. Which of the following is NOT a feature of Valence Shell Electron Pair Repulsion theory?

A. It determines the shape of molecule

C. It helps in understanding interaction of medicinal drug molecules

B. Pairs of electrons repel each other

D. Only lone pairs participate in determining geometry of molecules

Q99. Which of the following has smallest atomic radius?

A. Mg

C. P

B. S

D. Na

Q100. The difference of lithium from the other alkali metals is mainly because of:

A. Large radius and low charge density

C. Large radius and high charge density

B. Small radius and low charge density

D. Small radius and high charge density

Q101. Which of the following is not Basic in nature?

A. Aluminum oxide

C. Potassium oxide

B. Magnesium oxide

D. Sodium oxide

Q102. The solubility of sulphates of alkaline metals generally:

A. Increase down the group

C. Increase then decrease down the group

B. Decrease down the group

D. Doesn't change down the group

Q103. Which of the following is NOT an Alloy?

A. Steel

C. Bronze

B. Brass

D. Graphite

Q104. Electronic configuration of chromium (Proton number 24) is:

A. [Ar] 3d^4 4s^2

C. [Ar] 3d^5 4s^1

B. [Ar] 3d^5 4s^1

D. [Ar] 3d^6 4s^2

Q105. Which of the following is NOT a property of transition elements?

A. High melting points

C. Hard metals

B. Good conductors of electricity

D. Ions and compounds are colorless

Q106. T-Butene and two Butene are showing which type of isomerism?

A. Functional Group

C. Metamerism

B. Position

D. Chain

Q107. Which type of isomerism is displayed by compounds having same structural formula but different position of atoms on both sides of carbon bond?

A. Chain

C. Geometric

B. Geometric

D. Tautomerism

Q108. Homocyclic organic compounds are sub divided into two types namely:

A. Alicyclic and Aromatic

C. Aromatic and Non aromatic

B. Alkenes & Alkynes

D. Saturated & Unsaturated

Q109. Which of the following is an example of substituent group which release electrons to benzene ring:

A. -CN

C. $-NH_2$

B. $-NR_3^+$

D. $-NO_2$

Q110. Which one of the following represents nitration of benzene correctly?

A. (Image of reaction A)

C. (Image of reaction C)

B. (Image of reaction B)

D. (Image of reaction D)

Q111. In Friedel Craft acylation an acyl group is introduced in benzene ring in the presence of catalyst:

A. $AlCl_3$

C. Sunlight

B. H_2SO_4

D. V_2O_5

Q112. Identify correct ascending order of reactivity of alkyl halides:

A. Cl, Br, I, F

C. Br, I, F, Cl

B. F, Cl, Br, I

D. I, F, Cr, Br

Q113. Identify the correct statement related to substitution and elimination of alkyl halides:

A. Strong bases causes substitution in preference to elimination

C. Substitution is favored more than elimination by decreasing solvent polarity

B. Role of leaving groups in elimination is similar to substitution

D. Decrease in temperature will favor elimination more than substitution

Q114. Alkyl Halides involving -C-X bond breakage and -C-Nu bond formation simultaneously would follow which one of the following mechanisms:

A. S_N1

C. E1

B. S_N2

D. E2

Q115. $C_nH_{2n}O$ is the general formula of:

A. Ether

C. Ketones

B. Carboxylic acid

D. Carboxylic acid

Q116. The blue color of Fehling solution is changed to red when warmed with an aldehyde due to formation of which of the following?

A. NO_2

C. AgO

B. Cu_2O

D. SO_2

Q117. Reaction of HCN with formaldehyde is a:

A. Nucleophilic addition reaction

C. Electrophilic addition reaction

B. Nucleophilic substitution reaction

D. Electrophilic substitution reaction

Q118. Which of the following alcohol can give Iodoform reaction?

A. Methanol

C. 1-Propanol

B. 1-Butanol

D. Ethanol

Q119. Common name of 2-hydroxy propanoic acid is:

A. Tartaric acid

C. Phthalic acid

B. Lactic acid

D. Formic acid

Q120. Which of the following is correct regarding phenol:

A. Phenol and water are equally acidic

C. Phenol is less acidic than water

B. Phenol is less acidic than carboxylic acid

D. Phenol is less acidic than ethanol

Q121. When carboxylic acid are heated with alcohol in the presence of sulphuric acid one of the following is formed:

A. Amides

C. Esters

B. Acyl chloride

D. Acid Anhydride

Q122. Which one of the following is not an amino acid:

A. Folic acid

C. Glycine

B. Glutamic acid

D. Lysine

Q123. In an elastic collision the total kinetic energy:

A. Dissipates after collision

C. Reduces after the collision

B. Increases after the collision

D. Before and after collision remains the same

Q124. The instantaneous velocity along the curved path is:

A. Along the tangent

C. Parallel to the radius

B. Perpendicular to the slop

D. Anti-parallel to the radius

Q125. The range of projectile will be maximum if the factor sin2θ becomes:

A. Zero

C. -1

B. 1

D. 2

Q126. The two dimensional motion under constant acceleration due to gravity is called:

A. Circular motion

C. Projectile motion

B. Rotational motion

D. Vibratory motion

Q127. In velocity time graph the area under graph is equal to the:

A. Speed of an object

C. Distance covered by object

B. Velocity of an object

D. Acceleration of an object

Q128. According to Newton's Law of Motion the mass of the object is a quantitative measure of its:

A. Weight

C. Speed

B. Inertia

D. Acceleration

Q129. 1kWh = _____ J

A. 3.6J   C. 3.6 MJ

B. 3.6KJ   D. 3.6 GJ

130. Which of the following is a non-conservative force?

A. Frictional force   C. Elastic spring force

B. Electric force   D. Gravitational force

Q131. Work done is equal to:

A. Effort × distance   C. Effort - distance

B. Effort ÷ distance   D. Effort + distance

Q132. When a force of 1N displaces its point of application by 1m in the direction of force, the work done is:

A. 1 J   C. 0 J

B. 10 J   D. 0.1 J

Q0.1 J

133. An electric motor is used to lift the weight of 2.0N through a vertical distance of 100 cm in 4 sec. What is the power output of the motor?

A. 0.25 W

C. 0.75 W

B. 0.5 W

D. 1 W

Q0.25 W

 B. 0.5 W

 C. 0.75 W

 D. 1 W

134. The centripetal acceleration of an object moving along a circle of radius 'R' with an angular speed 'w' is given by the formula:

A. $a = r\omega^2$

C. $a = r^2\omega^2$

B. $a = r\omega$

D. $a = r\omega^3$

Q135. An aircraft makes a turn in a horizontal circle of radius 100m. It is travelling with a velocity of 250m/sec. The angular velocity of the aircraft will be:

A. 1.5 rad/sec

C. 3 rad/sec

B. 2.5 rad/sec

D. 3.5 rad/sec

136. A particle of mass 'm' is moving on a circular path of radius 'r' with velocity 'v', then centripetal force acting on it is F. If the velocity of particle increases by 2 times and radius of circular path increases by 4 times then new centripetal force F' will be:

A. F' = 2 F

B. F' = 1/2 F

C. F' = 4 F

D. F' = F

Q137. A roller coaster is moving with 30 ms^-1 on a circular track of radius 30m. the net mass of coaster + passengers is 'm' the centripetal force acting on it is:

A. 900m

B. m

C. 450 m

D. 30m

Q138. Amplitude in the following figure is given as:

A. 2m

B. 1/2m

C. ¼ m

D. m

Q139. Which one of the following is INCORRECT about the nodes when the string is plucked?

A. Amplitude of vibration is zero

B. Do not move along the string

C. Produced at the fixed ends of strings

D. Distance between consecutive nodes is 1 wavelength

Q140. In transverse waves the portion above the mean level is called:

A. Wave front

C. Wave trough

B. Wave crest

D. Wave length

Q141. Which one of the following does not cause stationary waves?

A. Two waves of equal frequency

C. Two waves of unequal amplitude

B. Two waves of same speed

D. Two waves travelling in opposite directions

Q142. Select the appropriate Doppler equation when source is approaching the stationary observer where f_0 is the observed frequency, f_s is frequency of source, v is the speed of sound, v_s is the speed of source relative to observer:

A. $f_0 = \frac{f_s}{1 + \frac{v_s}{v}}$

C. $f_0 = f_s (1 + \frac{v_s}{v})$

B. $f_0 = \frac{f_s}{1 - \frac{v_s}{v}}$

D. $f_0 = f_s (1 - \frac{v_s}{v})$

Q143. The distance between two successive particles which are exactly in the same state of vibration is called:

A. Frequency

C. Wavelength

B. Amplitude

D. Time period

Q144. During the isothermal process, the temperature:

A. remains constant during the initial phase

C. alters throughout the process

B. remains constant throughout the process

D. increases throughout the process

Q145. What is the value of heat energy (Q) in an adiabatic process?

A. 1

C. 0

B. -1

D. 2

Q146. The Coulomb's law states:

A. Force between two point charges is inversely proportional to the product of the charges and directly proportional to the square of the distance between them

B. Force between two point charges is directly proportional to the product of the charges and inversely proportional to the square of the distance between them

C. Force between two point charges is directly proportional to the sum of the charges and inversely proportional to the square of the distance between them

D. Force between two point charges is directly proportional to the product of the charges and the square of the distance between them

Q147. The formula V = W / q represents:

A. Electric intensity

B. Electric power

C. Electric potential

D. Electric field gradient

Q148. The S.I unit of capacitance of a capacitor is:

A. Coulomb

B. Volt

C. Farad

D. Ampere

Q149. Electric intensity between two oppositely charge plates in the middle region is:

A. Non-uniform

B. Uniform

C. Cannot be predicted

D. Variable

Q150. Find potential difference in moving 2 C charge which requires 600J of work between two points.

A. 1200V

B. 300V

C. 150V

D. 2400V

Q151. Which one of the following is NOT a feature of electric forces?

A. They act on charges

B. They act on masses

C. They can be attractive

D. They can be repulsive

Q152. A charge of 90 C passes through a wire for 30 seconds. Then the current in the wire will be:

A. 3A

B. 0.3A

C. 3 mA

D. 0.3 mA

Q0.3A

C. 3 mA

D. 0.3 mA

153. The magnitude of the current in metals is proportional to the potential difference across it as long as temperature of conductor is kept constant is known as:

A. Joule's Law

B. Gauss Law

C. Ohm's Law

D. Ampere's Law

Q154. When length of copper wire is doubled then resistivity becomes:

A. Double

B. Half

C. Remains same

D. Four times

Q155. The resistance of semi-conductor with rise in temperature:

A. Increases

B. Decreases

C. Remain same

D. Infinite

Q156. Volt x Ampere is the measure of:

A. Current

C. Resistance

B. Volt

D. Power

Q157. The formula $\Phi = B \cdot A$ represents:

A. Electric flux

C. Electric flux density

B. Magnetic flux

D. Gravitational flux

Q158. Which of the following statement is incorrect for any magnetic field lines?

A. Lines start at north pole and ends at south pole

C. The lines are curved

B. Lines never touch or cross each other

D. Magnetic field is strongest when the lines are farthest

Q159. The unit of magnetic flux density is:

A. Wb/m^2

C. Wbm^2

B. Wbm

D. Wb

Q160. The induced current will flow in such a direction so as to oppose the cause that produces it is statement of:

A. Ampere's Law

C. Lenz's Law

B. Faraday's Law

D. Joule's Law

Q161. In an AC generator the emf will be maximum when factor $\sin(\omega t)$ is equal to:

A. Zero

C. 2

B. 1

D. 1/2

Q162. Electric generators and transformers are based on the principles of:

A. Coulomb's law

C. Ampere's law

B. Faraday's law

D. Hooke's law

Q163. In an ideal transformer:

A. Power input is equal to Power output

C. Power input is greater than Power output

B. Power input is less than half of the power output

D. Power input is more than half of the power output

Q164. The conversion of AC into DC is called rectification and circuit is called rectifier. Which component of electronics acts as a rectifier?

A. Diode

C. Transformer

B. Transistor

D. Inductor

Q165. Full wave rectification is given by:

A. One diode connected in bridge type arrangements

C. Three diodes connected in bridge type arrangements

B. Two diodes connected in bridge type arrangements

D. Four diodes connected in bridge type arrangements

Q166. A diode characteristic curve is a plot between:

A. Current and time

C. Voltage and current

B. Voltage time

D. Reverse voltage forward voltage

Q167. The value of Planck constant is:

A. 6.63×10^{-34} Js

B. 6.63×10^{-34} J

C. 6.63×10^{-34} s^{-1}

D. 6.63×10^{-34} Js^{-1}

Q6.63×10^{-34} Js

B. 6.63×10^{-34} J

C. 6.63×10^{-34} s^{-1}

D. 6.63×10^{-34} Js^{-1}

168. The de-Broglie wavelength associated with a particle moving at 10^6 m/s and having mass 10^{-30} kg:

A. 6.60×10^{-19} m

B. 1.5×10^{-9} m

C. 1.9×10^{-5} m

D. 7.2×10^{-8} m

Q6.60×10^{-19} m

B. 1.5×10^{-9} m

C. 1.9×10^{-5} m

D. 7.2×10^{-8} m

169. Light propagates through space as a wave is evident by all of the following EXCEPT:

A. Interference

B. Photoelectric effect

C. Polarization

D. Diffraction

Q170. Which series falls in ultra violet region?

A. Lyman   C. Pfund

B. Brackett   D. Paschen

Q171. The potential through which an electron should be accelerated, so that, on collision it can lift the electron in the atom from its ground state to some higher state is known as:

A. Ionization potential   C. Stopping potential

B. Excitation potential   D. Acceleration potential

Q172. Which of the following regarding X Rays is INCORRECT:

A. Have higher wavelength than visible light C. They are highly penetrating in soft body tissues

B. They are part of electromagnetic spectrum D. They are high energy photons

Q173. The unit of decay constant is:

A. m   C. s^{-1}

B. s   D. m^{-1}

Q174. If we have N_0 number of any radioactive element then after a period of n half-lives the number of atoms left behind is:

A. $2N_0$ C. $\left(\frac{1}{2}N_0\right)^n$

B. $\left(\frac{1}{2}\right)^n N_0$ D. $(2N_0)^n$

Q175. Which of the following is NOT the Somatic biological effect of radiation?

A. Skin burn   C. Induction of cancer

B. Loss of hair   D. Genes mutation

Q176. An artificial radioactive element can be made by bombarding:

A. High energy particles on unstable elements

C. High energy particles on stable elements

B. Low energy particles on unstable elements

D. Low energy particles on stable elements

Q177. What does the word "SURPLUS" mean?

A. In excess

C. Within reach

B. A mathematical term

D. Salutation

Q178. What does the word "ANCESTOR" mean?

A. Collection of stars

C. Forefathers

B. Branch of astrology

D. Type of receptors

Q179. What does the word "SPILL" mean?

A. Coil

C. Spoil

B. Deliver

D. Spread

Q180. Pick the CORRECT option:

A. The supervisor has nor will ever compromise.

C. The supervisor has not compromised nor will ever compromise.

B. The supervisor has nor will ever compromised.

D. The supervisor has nor will ever compromising.

Q181. The soup _____ good.

A. Taste

C. Is tasting

B. Tastes

D. Has taste

Q182. I _____ him for a long time.

A. Have never known

C. Had never been known

B. Had never knew

D. Would never knew

Q183. Choose the sentence that is punctuated correctly:

A. He said to his disciples "Watch and pray."

C. He said to his disciples, "watch and, pray."

B. He said to his disciples, "Watch and pray."

D. He said to his disciples "watch and pray."

Q184. Choose the CORRECT spellings.

A. Pharoah

C. Phoroh

B. Pharoah

D. Pharaoh

Q185. Choose the CORRECT sentence:

A. She has beauty, brains and wealth—a rare combination.

C. She has beauty, brains and wealth: a rare combination.

B. She has beauty, brains, and wealth; a rare combination.

D. She has beauty, brains, and wealth: a rare combination.

Q186. Choose the correct sentence:

A. In 1838 Schleiden suggested that all plants were made of cells.

C. In 1838 Schleiden suggested that all plant were made of cells.

B. In 1838 Schleiden suggest that all plants were made of cells.

D. In 1838 Schleiden suggested to all plants were made of cells.

Q187. _____ words spoken in earnest will convince him.

A. A few

C. Few

B. The few

D. Fewer

Q188. He takes _____ his father. Fill in the blank with appropriate preposition.

A. Up

C. After

B. Down

D. In

Q189. Choose the CORRECT sentence:

A. There's Mr. Hashim whome they say is the best portrait painter in the town.

C. There's! Mr. Hashim which they say is the portrait painter in the town.

B. There's Mr. Hashim, who they say is the best portrait painter in the town.

D. There's Mr. Hashim who they say is the portrait painter in the town.

Q190. Choose the CORRECT sentence:

A. Gulliver travels was written to Swift.

C. Gulliver's Travels was written by Swift.

B. Gulliver travels was written at Swift.

D. Gulliver's travel was written by Swift.

Q191. Choose the CORRECT sentence:

A. "The unexamined life", said Socrates, "is unfit to be lived by man."

C. "The unexamined life" said Socrates, "is unfit to be lived by man."

B. "The unexamined life", said Socrates, "is unfit to be lived by man."

D. "The unexamined life," said Socrates, "is unfit to be lived by man."

Q192. Choose the CORRECT sentence:

A. You have often heard me speaking of my friend Wahaj Waheed who is a barrister here.

C. You have often heard me speak about my friend

B. You have often heard me speak of my friend, Wahaj Waheed, who is a barrister here.

D. Wahaj Waheed-a barrister here.

Q193. Choose the CORRECT sentence:

A. The first space traveller was Dennis Tito from the United States.

C. The first space traveler was Dennis Tito-from united State.

B. The first space traveler was Dennis Tito, from the United states.

D. Tito, from the United States.

Q194. Choose the CORRECT sentence:

A. It was greatly good by you to proposed a day's picnic at Murree.

C. It was awfully good of you to propose a day's picnic at Murree.

B. It was awfully good by you to proposed a day's picnic in Murree.

D. It was very good off you to propose days picnic in Murree.

Q195. The government has increased the taxes on all businesses in Pakistan. II. Many small businesses will have to close their operations in Pakistan.

A. Statement I is the cause and statement II is its effect.

C. Both the statements I and II are independent causes.

B. Statement II is the cause and statement I is its effect.

D. Both the statements I and II are effects of independent causes.

Q196. Read the passage and the following statements below. Then choose the correct option, basing your answer only on the information provided. Pakistan is rich in wildlife and culture. It is home to many sorts of wildlife, from the Ibex to the Indus River Dolphins; and people from most countries in the world have made their homes here. **Statements:**

I. Pakistan is a rich country.

II. People from all nationalities of the world live in Pakistan.

III. Pakistan is home to at least one dolphin species.

A. Only II is correct

B. Only III is correct

C. Only I and III are correct

D. Only II and III are correct

Q197. Observe the pattern and select the next term, in the sequence: JEQ, HEO, FEN

A. DFN

B. GEK

C. DEL

D. GFZ

Q198. Read the following and choose the correct answer: "X, Y and Z are three whole numbers less than 24 but greater than 11. X is the smallest prime number. Y is the largest number divisible by 3. Z is the smallest number divisible by 11."

A. X is 13, Y is 24, Z is 11

B. X is 13, Y is 21, Z is 22

C. X is 11, Y is 21, Z is 11

D. X is 13, Y is 21, Z is 12

Q199. Read the following and choose the correct answer: "P, Q and R are one-digit, non-negative numbers. P is the smallest even number. Q is the largest odd number. R is 5."

A. $P + Q + R = 16$

B. $P + Q + R = 12$

C. $(Q + R) \times P = 30$

D. $Q \times R + P = 8$

Q200. All hammers are tools. Some tools are useless things. Given only these facts are true.

Which of the following conclusions is NECESSARILY TRUE given all useless things are trash?

Conclusions:

I. Some hammers are trash.

II. Some tools are trash.

III. All useless things are tools.

A. I

B. II

C. III

D. I & III