BIOLOGY

1. **Example of viruses having a polyhedral capsid that is with 252 capsomeres is:**
   A. Adenovirus
   B. Tobacco Mosaic Virus
   C. Influenza virus
   D. Bacteriophage
2. **The complete, mature & infectious particle of virus is known as:**
   A. Genome
   B. Capsomere
   C. Prion
   D. Envelope
3. **The causative organism of measles is**
   A. Poxivirus
   B. Paporivirus
   C. Picornovirus
   D. Paramyxovirus
4. **In the life cycle of a bacteriophage, the lysozymes are required in which of the following steps of infection process?**
   A. Genome injection
   B. Penetration
   C. Replication
   D. Adsorption
5. **_____ is transmitted through infected blood and hypodermic syringes**
   A. HIV
   B. Influenza Virus
   C. Morbilli Virus (Measles)
   D. Vibrio Cholerae (Cholera)
6. **In Calvin cycle CO_2 reacts with RuBP to produce _____.**
   A. 3-PGA
   B. G3P
   C. 6-Carbon unstable intermediate
   D. 1,3 bisphosphglycerate
7. **Which option is correct about a chlorophyll molecule?**
   A. Chemical formula $C_{55}H_{70}O_6N_4Mg$
   B. Porphyrin ring with nitrogen in centre
   C. Methyl group on second pyrrole ring
   D. Aldehyde group on second pyrrole ring
8. **In the journey of electrons from photosystem II to photosystem I plastocyanine is reduced by**
   A. Plastoquinone
   B. Cytochrome complex
   C. P_{700}
   D. Primary electron acceptor of PSI
9. **Enzyme NADP reductase is responsible for:**
   A. Reducing $NADP^+$
   B. Oxidizing $NADP^+$
   C. Reducing Ferredoxin
   D. Reducing P_{700}
10. **The PS II during light reactions receives electrons from splitting**
    A. Water
    B. Plastoquinone
    C. Plastocyanin
    D. Ferridoxin
11. **Mono-saccharides have a general formula represented by**
    A. $Cn(H_2O)n$
    B. $C(H_2O)n$
    C. $C_2(H_2O)n$
    D. $C^n(H_2O)n$
12. **What is the percentage of H_2O in bone cells?**
    A. 70 %
    B. 20 %
    C. 99 %
    D. 60 %
13. **When glycerol reacts with fatty acid, which type of chemical bond will form?**
    A. Ester Bond
    B. Ether Linkage
    C. Hydrogen Bond
    D. Ionic Bond
14. **Polysaccharides in plants are synthesized by the process of**
    A. Hydrolysis
    B. Oxidation
    C. Condensation
    D. Glycolysis
15. **Which of the following process is involved in breakdown of protein into Amino acids?**
    A. Condensation
    B. Hydrolysis
    C. Glycolysis
    D. Fixation
16. **The hydrophilic end of phospholipid molecule is polar because of the presence of**
    A. Glycerol
    B. Amine group
    C. Fatty Acid
    D. Phosphate group

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

A. Fructose
B. Glucose
C. Ribose
D. Deoxyribose

18. Chloroplast are membrane bound bodies containing

A. Enzymes
B. Cisternae
C. Pigment
D. Cristae

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

A. Intracellular digestion
B. Autophagy
C. Autolysis
D. Processing of cell secretions

20. The nucleus takes dyes due to the presence of

A. Chromatin
B. Lipid
C. Metal ions
D. Thylakoids

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

A. Peroxiosomes
B. Glyoxiosomes
C. Microbodies
D. Vacuoles

22. Posterior lobe of pituitary produce

A. Antidiuretic Hormone (ADH)
B. Thyroid Stimulating Hormone (TSH)
C. Adreno Corticufrotric Hormone (ACH)
D. Follicle Stimulating Hormone (FSH)

23. In human myelinated fibers nerve impulse travels at_____ meters per second.

A. 100-120
B. 130-150
C. 160-180
D. 190-210

24. Nissl's granules are groups of

A. Mesosomes
B. Lysosomes
C. Ribosomes
D. Chromosome

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

A. K^+
B. Na^+
C. Ca^+
D. Cl^-

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

A. Acetylcholine
B. Endorphins
C. Dopamine
D. Gamma – aminobutyric acid

27. Depolarization during conduction of nerve impulse is due to

A. Inward movement of Na^+
B. Inward movement of K^+
C. Outward movement of K^+
D. Outward movement of Na^+

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

A. Regulate response of visceral organs
B. Regulate response of skeletal muscles
C. Regulate response of glands
D. Regulate response of smooth muscles

29. Taste receptor is an example of

A. Mechano receptors
B. Nociceptors
C. Photo receptors
D. Chemo receptors

30. Which of the following belongs to chordates

A. Spider
B. Earthworm
C. Trout Fish
D. Star Fish

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

A. Increase in enzyme concentration increases the rate
B. Increase in enzyme concentration reduces the rate
C. All enzymes work at their maximum rate at optimum temperature
D. All enzymes work at their maximum rate at optimum pH

32. 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

33. Chromosomal abnormality in Turner syndrome is represented by?
A. XXX
B. XYY
C. XO
D. XXY

34. 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

35. Identify the correct pair of vestigial organs:
A. Ear Muscles & Vermiform appendix
B. Heart & Liver
C. Ear Muscles & Liver
D. Vermiform appendix & Heart

36. Which of the following increases variation within a gene pool?
A. Chromosome inversion
B. Crossing over
C. Gene mutation
D. Random fusion of gametes

37. Which of the following statements about natural selection is not true?
A. It affects variations that are heritable
B. It is selected by a breeder
C. It can improve the adaptation of species
D. It is regional in nature

38. The formula calculating the frequency of genotypes and alleles in a population gene pool is known as:
A. Hardy-Weinberg Equation
B. Lamarck Equation
C. Darwin Equation
D. James Hutton Equation

39. The idea of inheritance of acquired characteristics was presented by:
A. Jean Baptist Lamarck
B. Charles Darwin
C. Thomas Malthus
D. Alfred Wallace

40. According to endosymbiosis theory, flagella may have derived by the ingestion of prokaryotes similar to
A. Amoeboid prokaryote
B. Aerobic bacterium
C. Spirochete
D. Spirillum

41. Insulin converts glucose into
A. Vitamins
B. Minerals
C. Lipids
D. Cortisone

42. About 70% of the carbon dioxide is carried in blood as:
A. Carbonate
B. Bicarbonate
C. Tricarbonate
D. Carbonic anhydrase

43. Range of normal total lung capacity in humans is
A. 5-6 liter
B. 8-9 liter
C. 10-11 liter
D. 12-13 liter

44. Respiration in Pseudomonas bacteria is
A. Aerobic
B. Anaerobic
C. Facultative
D. Microaerophili

45. Autotrophic mode of nutrition in organism depends upon
A. Saprotrophic mode
B. Parasitic mode
C. Photosynthesis mode
D. Obligate mode

46. Prokaryotic cells lack
A. Mesosomes
B. Ribosomes
C. Storage bodies
D. Membrane bound organelles

47. Bacterial genome becomes diploid:
A. After fertilization of gametes
B. Before spore formation
C. During binary fission
D. After binary fission

48. One of the following is CORRECT regarding flagella:
A. Made up of macrofilaments
B. Contains centriole
C. Originates from basal bodies
D. They are immotile

49. Which option is CORRECT about endospore?
A. Has a short dormant period
B. Contains moisture for survival
C. Metabolically actively
D. Endures extreme condition

50. Bacteria divide at exponential rate during which growth phase?
A. Lag
B. Log
C. Stationary
D. Decline

51. Mesosomes are the invagination of bacterial cell structure
A. Cell wall
B. Cell membrane
C. Plasmid
D. Cysts

52. Female reproductive system consists all of the following EXCEPT
A. Ovaries
B. Oviduct
C. Cervix
D. Seminiferous tubules

53. Which one of the following hormone is responsible for the labor pains in human female at the time of birth of baby?
A. Estrogen
B. Progesterone
C. Oxytocin
D. Corticosteroid

54. Fluid secreted by sertoli cells provides liquid medium, protection and nourishment to:
A. Oocyte
B. Sperms
C. Polar body
D. Spermatogonia

55. Corpus luteum during female reproductive cycle produces
A. Testosterone
B. Follicle stimulating hormone
C. Luteinizing Hormone
D. Progesterone

56. Due to the process of follicle atresia:
A. Follicles reach maximum size
B. Follicle degenerates
C. Graafian follicle ovulates
D. Follicle starts to mature

57. Main function of the epididymis is to:
A. Transport sperms
B. Connect with urethra
C. Produce semen
D. Hold the process of spermatogenesis

58. Immediate next stage of spermatogonia differentiation is:
A. Secondary spermatocyte
B. Spermatids
C. Primary spermatocytes
D. Sperms

59. Which of the following is included in paired cranial bones?
A. Temporal
B. Occipital
C. Frontal
D. Vomer

60. Which of the following skeletal disorder is an example of autoimmune disorder?
A. Sciatica
B. Spondylosis
C. Rheumatoid arthritis
D. Rickets

61. Which feature is possessed by smooth muscles?
A. Voluntary
B. Branched
C. Uni-nucleate
D. Striated appearance

62. The accumulation of 'lactic acid' in the muscles results in
A. Extreme fatigue
B. Muscle contraction
C. Paralysis
D. Convulsion

63. Thick filaments in skeletal muscles are composed of:
A. Actin
B. Myosin
C. Tropomyosin
D. Troponin

64. Sarcomere is part of myofibril between:
A. Two I bands
B. Two A bands
C. Two M lines
D. Two Z lines

65. Medulla Oblongata is a part of:
A. Forebrain
B. Mid brain
C. Hind brain
D. Hippocampus

66. Which of the following is NOT a bone of upper limb?
A. Humerus
B. Ulna
C. Femur
D. Radius

67. Bone forming cells are
A. Osteoblasts
B. Osteocytes
C. Osteoclasts
D. Osteons

68. The chromosomes was first observed by;
A. T. H Morgan
B. Griffith
C. Walther
D. Mendel

CHEMISTRY

69. Number of moles in an element is directly proportional to:
A. Mass of an element
B. Empirical formula mass
C. Molar mass of an element
D. Formula mass

70. The type and relative amount of each isotope in an element can be found by:
A. R spectroscopy
B. U. V spectroscopy
C. Mass Spectrometry
D. N.M.R

71. The atomic masses of element depend upon:
A. Atomic number
B. Number of electrons
C. Number of isopotes & their abundance
D. None of the above

72. No individual atom in the sample of 1 mole of Neon has a mass of 20.18 a.m.u. because it is:
A. Overall mass of an isobar
B. It is a fractional mass
C. It is molar mass of Ne
D. Average atomic mass of Ne

73. The p orbital has
A. 2 lobes
B. 3 lobes
C. 4 lobes
D. 5 lobes

74. Which of the following electronic configuration is correct for carbon?
A. $1s^2 2s^2 2p^3$
B. $1s^2 2s^2 2p^4$
C. $1s^2 2s^2 2p^2$
D. $1s^2 2s^2 2p^1$

75. Intermolecular forces between molecules of ideal gas are
A. Strong
B. Moderate
C. Weak
D. Absent

76. The correct ideal gas equation is
A. $qV=nRt$
B. $pV=nRt$
C. $gV=nRt$
D. $yV=nRt$

77. The real gases show deviation from ideal behavior at:
A. Low temperature and low pressure
B. High temperature and high pressure
C. Low temperature and high pressure
D. High temperature and low pressure

78. In order to boil water at 110°C, external pressure should be
A. 200 – 760 torr
B. 760 – 1200 torr
C. 665-670 torr
D. 660-700 torr

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

A. Ammonia
B. Ethyl alcohol
C. Carboxylic acid
D. Hydrocarbon

80. 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

81. 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

82. One of the following is NOT an example of amorphous solids

A. Plastic
B. Glass
C. Glucose
D. Rubber

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

A. Rhombic
B. Hexagonal
C. Tetragonal
D. Trigonal

84. 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-Chatelier
C. Boyle's
D. Charles'

85. 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 continual removal of ammonia
D. High pressure low temperature continual addition of ammonia

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

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

A. $BiCl_3$
B. H_2O
C. BiOCl
D. HCl

87. 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 x 100
D. Time taken for the change x Change in concentration of substance

88. Consider the hypothetical equation aA + bB → cC+Dd: Which of the following represents correct rate equation?

A. Rate = $k[A][B]$
B. Rate = $k[A]^a[B]^b$
C. Rate = $k[A]^a$
D. Rate = $k[B]^2$

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

A. 3rd order
B. 2nd order
C. 1st order
D. Zero order

90. Which of the following is CORRECT Arrhenius equation?

A. $K=Ae^{-Ea/QT}$
B. $K=Ae^{-Ea/RT}$
C. $K=Ae^{-Ea/ST}$
D. $K=Ae^{-Ea/UT}$

91. In endothermic reaction, the heat content of the

A. Reactants and products is equal
B. Reactants is more than that of products
C. Products is more than that of reactants
D. Reactants & Products will not change

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

A. Atomizing the metal
B. Ionizing the metal
C. Deionize the metal
D. Ionize non metal

93. The enthalpy change when1 Mole of water is formed by the reaction of acid with an alkali under standard conditions is known as:

A. Enthalpy of formation
B. Enthalpy of reaction
C. Enthalpy of combustion
D. Enthalpy of neutralization

94. Oxidation number of 'Mn' in $KMnO_4$ is

A. 0
B. +1
C. -7
D. +7

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

A. Split the reaction into two half reactions
B. Assign oxidation number to all the atoms involved in the equation
C. Identify the element undergoing a change in oxidation number
D. Equalize the number of electrons lost and gained

96. Which of the following is NOT a correct feature of electrolytic cells?

A. Reduction occurs at cathode
B. Oxidation occurs at anode
C. Alternating current source is connected to electrodes
D. Electrochemical reaction takes place

97. Which of the following has a coordinate bond?

A. NaCl
B. CaO
C. NH_3BF_3
D. H_2O

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

A. It determines the shape of molecule
B. Pairs of electrons repel each other
C. It helps in understanding interaction of medicinal drug molecules
D. Only lone pairs participate in determining geometry of molecules

99. Which of the following has smallest atomic radius

A. Mg
B. S
C. P
D. Na

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

A. Large radius and low charge density
B. Small radius and low charge density
C. Large radius and high charge density
D. Small radius and high charge density

101. Which of the following is not Basic in nature

A. Aluminum oxide
B. Magnesium oxide
C. Potassium oxide
D. Sodium oxide

102. The solubility of sulphates of alkaline metals generally

A. Increase down the group
B. Decrease down the group
C. Increase then decrease down the group
D. Doesn't change down the group

103. Which of the following is NOT an Alloy

A. Steel
B. Brass
C. Bronze
D. Graphite

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

A. [Ar] $3d^4\ 4s^2$
B. [Ar] $3d^5\ 4s^2$
C. [Ar] $3d^5\ 4s^1$
D. [Ar] $3d^6\ 4s^2$

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

A. High melting points
B. Good conductors of electricity
C. Hard metals
D. Ions and compounds are colorless

106. I-Butene and two Butene are showing which type of isomerism?

A. Functional Group
B. Position
C. Metamerism
D. Chain

107. 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
B. Metamerism
C. Geometric
D. Tautomerism

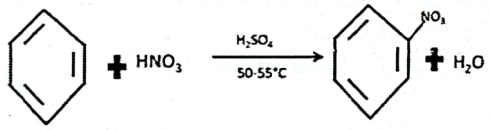
108. Homocyclic organic compounds are sub divided into two types namely:

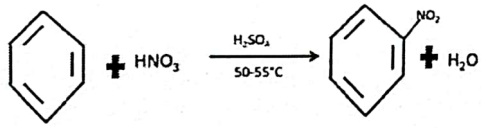
A. Alicyclic and Aromatic
B. Alkenes & Alkynes
C. Aromatic and Non aromatic
D. Saturated & Unsaturated

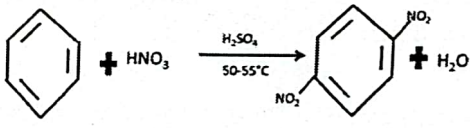
109. Which of the following is an example of substituent group which release electrons to benzene ring :

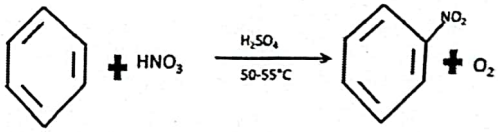
A. $-CN$
B. $-NR_3^+$
C. $-NH_2$
D. $-NO_2$

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

A. 

B. 

C. 

D. 

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

A. $AlCl_3$
B. H_2SO_4
C. Sunlight
D. V_2O_5

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

A. Cl, Br, I, F
B. F, Cl, Br, I
C. Br, I, F, Cl
D. I , F, Cr, Br

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

A. Strong bases causes substitution in preference to elimination
B. Role of leaving groups in elimination is similar to substitution
C. Substitution is favored more than elimination by decreasing solvent polarity
D. Decrease in temperature will favor elimination more than substitution

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

A. S_{N1}
B. S_{N2}
C. E_1
D. E_2

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

A. Ether
B. Carboxylic acid
C. Ketones
D. Carbolic acid

116. 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
B. Cu_2O
C. AgO
D. SO_2

117. Reaction of HCN with formaldehyde is a:

A. Nucleophilic addition reaction
B. Nucleophilic substitution reaction
C. Electrophilic addition reaction
D. Electrophilic substitution reaction

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

A. Methanol
B. 1-Butanol
C. 1-Propanol
D. Ethanol

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

A. Tartaric acid
B. Lactic acid
C. Phthalic acid
D. Formic acid

120. Which of the following is correct regarding phenol

A. Phenol and water are equally acidic
B. Phenol is less acidic than carboxylic acid
C. Phenol is less acidic than water
D. Phenol is less acidic than ethanol

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

A. Amides
B. Acyl chloride
C. Esters
D. Acid Anhydride

122. Which one of the following is not an amino acid

A. Folic acid
B. Glutamic acid
C. Glycine
D. Lysine

PHYSICS

123. In an elastic collision the total kinetic energy

A. Dissipates after collision
B. Increases after the collision
C. Reduces after the collision
D. Before and after collision remains the same

124. The instantaneous velocity along the curved path is ;

A. Along the tangent
B. Perpendicular to the slop
C. Parallel to the radius
D. Anti-parallel to the radius

125. The range of projectile will be maximum if the factor sin2Θ becomes

A. Zero
B. 1
C. -1
D. 2

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

A. Circular motion
B. Rotational motion
C. Projectile motion
D. Vibratory motion

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

A. Speed of an object
B. Velocity of an object
C. Distance covered by object
D. Acceleration of an object

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

A. Weight
B. Inertia
C. Speed
D. Acceleration

129. 1KWh = _____ J?

A. 3.6J
B. 3.6KJ
C. 3.6 MJ
D. 3.6 GJ

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

A. Frictional force
B. Electric force
C. Elastic spring force
D. Gravitational force

131. Work done is equal to:

A. Effort × distance
B. Effort + distance
C. Effort – distance
D. Effort ÷distance

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

A. 1 J
B. 10 J
C. 0 J
D. 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
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. $a = r\omega^2$
B. $a = r\,\omega$
C. $a = r^2\,\omega$
D. $A = r^2\,\omega^2$

135. An air craft makes a turn in a horizontal circle of radius100m. It is travelling with a velocity of 250m/sec. The angular velocity of the air craft will be:

A. 1.5 rad/sec
B. 2.5 rad/sec
C. 3 rad/sec
D. 3.5 rad/sec

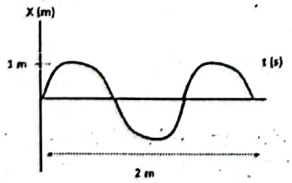
136. A particle of mass 'm' is moving on a circular path of radius 'r' with velocity 'v', then centripetal force acting on it is F. if the velocity of particle increases by 2 times and radius of circular path increases by 4 times then new centripetal force F´ will be;

A. $F' = 2\,F$
B. $F' = \frac{1}{2}F$
C. $F' = 4\,F$
D. $F' = F$

137. 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

138. Amplitude in the following figure is given as:



A. 2m
B. 1/2m
C. ¼ m
D. 1m

139. 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

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

A. Wave front
B. Wave crest
C. Wave trough
D. Wave length

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

A. Two waves of equal frequency
B. Two waves of same speed
C. Two waves of unequal amplitude
D. Two waves travelling in opposite directions

142. Select the appropriate Doppler equation when source is approaching the stationary observer where f_o 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. $f_o = \frac{v}{v-v_s} f_s$
B. $f_o = \frac{v}{v+v_s} f_s$
C. $f_o = \frac{v-v_s}{v} f_s$
D. $f_o = \frac{v-v_s}{v+v_s} f_s$

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

A. Frequency
B. Amplitude
C. Wavelength
D. Time period

144. During the isothermal process, the temperature

A. remains constant during the initial phase of the process
B. remains constant throughout the process
C. alters throughout the process
D. increases throughout the process

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

A. +1
B. -1
C. 0
D. +2

146. 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

147. The formula $V = W / q_o$ represents

A. Electric intensity
B. Electric power
C. Electric potential
D. Electric field gradient

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

A. Coulomb
B. Volt
C. Farad
D. Ampere

149. Electric intensity between two oppositely charge plates in the middle region is_____

A. Non-uniform
B. Uniform
C. Cannot be predicted
D. Variable

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

A. 1200V
B. 300V
C. 150V
D. 2400V

151.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

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

A. 3A
B. 0.3 A
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

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

A. Double
B. Half
C. Remains same
D. Four times

155.The resistance of semi-conductor with rise in temperature

A. Increases
B. Decreases
C. Remain same
D. Infinite

156.Volt x Ampere is the measure of;

A. Current
B. Volt
C. Resistance
D. Power

157.The formula $\phi = B.A$ represents

A. Electric flux
B. Magnetic flux
C. Electric flux density
D. Gravitational flux

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

A. Lines start at north pole and ends at south pole
B. Lines never touch or cross each other
C. The lines are curved
D. Magnetic field is strongest when the lines are farthest

159.The unit of magnetic flux density is ;

A. Wbm^{-1}
B. Wbm
C. Wbm^{-2}
D. Wb

160.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
B. Faraday's Law
C. Lenz's Law
D. Joule's Law

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

A. Zero
B. 1
C. 2
D. 1 / 2

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

A. Coulomb's law
B. Faraday's law
C. Ampere's law
D. Hook's law

163.In an ideal transformer:

A. Power input is equal to Power output
B. Power input is less than half of the power output
C. Power input is greater than Power output
D. Power input is more than half of the power output

164.The conversion of A.C into D.C is called rectification and circuit is called rectifier. Which component of electronics acts as a rectifier?

A. Diode
B. Transistor
C. Transformer
D. Inductor

165.Full wave rectification is given by:

A. One diode connected in bridge type arrangements
B. Two diodes connected in bridge type arrangements
C. Three diodes connected in bridge type arrangement
D. Four diodes connected in bridge type arrangements

166.A diode characteristic curve is a plot between:

A. Current and time
B. Voltage time
C. Voltage and current
D. Reverse voltage forward voltage

167.The value of Planck constant is

A. 6.63×10^{-34}Js
B. 6.63×10^{34} Js
C. 6.63×10^{-34} Js^{-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. 6.6×10^{-10} 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. Diffraction
D. Polarization

170.Which series falls in ultra violet region?

A. Lyman
B. Brachett
C. Pfund
D. Paschen

171.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
B. Excitation potential
C. String potential
D. Acceleration potential

172.Which of the following regarding X Rays is INCORRECT

A. Have higher wavelength than visible light
B. They are part of electromagnetic spectrum
C. They are highly penetrating in soft body tissues
D. They are high energy photons

173.The unit of decay constant is ;

A. m
B. s
C. s^{-1}
D. m^{-1}

174.If we have "N_o" number of any radioactive element then after a period of "n" half-lives the number of atoms left behind is

A. $2^n N_o$
B. $(½)^n N_o$
C. $(½ N_o)^n$
D. $(2N_o)^n$

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

A. Skin burn
B. Loss of hair
C. Induction of cancer
D. Genes mutation

176. An artificial radioactive element can be made by bombarding

A. High energy particles on unstable elements
B. Low energy particles on unstable elements
C. High energy particles on stable elements
D. Low energy particles on stable elements

ENGLISH

177. What does the word "SURPLUS" mean?

A. In excess
B. A mathematical term
C. Within reach
D. Salutation

178. What does the word "ANCESTOR" mean?

A. Collection of stars
B. Branch of astrology
C. Forefathers
D. Type of receptors

179. What does the word "SPILL" mean?

A. Coil
B. Deliver
C. Spoil
D. Spread

180. Pick the CORRECT option:

A. The supervisor has nor will ever compromise.
B. The supervisor have nor will ever compromise.
C. The supervisor has not compromised nor will ever compromise.
D. The supervisor has nor will ever compromised.

181. The soup _____ good

A. Taste
B. Tastes
C. Is tasting
D. Has taste

182. I _____ him for a long time.

A. Have never known
B. Had never knew
C. Had never been known
D. Would never knew

183. Choose the sentence that is punctuated correctly:

A. He said to his disciples "Watch and pray."
B. He said to his disciples, "Watch and pray."
C. He said to his disciples, "watch and, pray"
D. He said to his disciples' "watch and pray."

184. Choose the CORRECT spellings.

A. Pharaoh
B. Pharoah
C. Pheroh
D. Pheraoh

185. Choose the CORRECT sentence

A. She has beauty, brains and wealth–a rare combination.
B. She has beauty, brains, and wealth–a rare combination.
C. She has beauty, brains, and wealth; a rare combination.
D. She has beauty, brains, and wealth: a rare combination.

186.Choose the correct sentence

A. In 1838 Schleiden suggested that all plants were made of cells
B. In 1838 Schleiden suggest that all plants were made of cells
C. In 1838 Schleiden suggested that all plant were made of cells
D. In 1838 Schleiden suggested to all plants were made of cells

187._____ words spoken in earnest will convince him

A. A few
B. The few
C. Few
D. Fewer

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

A. Up
B. Down
C. After
D. In

189.Choose the CORRECT sentence

A. There's mr. hashim whome they say is the best portrait painter in the town.
B. There's Mr. Hashim, who they say is the best portrait painter in the town.
C. Theres' Mr. Hashim which they say is the portrait painter in the town
D. There's Mr. Hashim who they say is best portrait painter in the town.

190.Choose the CORRECT sentence

A. Gulliver travels was writen to Swift.
B. Gulliver travels was writen at Swift.
C. Gulliver's Travels was written by Swift.
D. Gullivers' travel was written by Swift

191.Choose the CORRECT sentence

A. "The unexamined life", said Socrates, "is unfit to be lived by man."
B. The inexamined life, said Socrates, "is unfit to be lived by man"
C. "The unexamined life said Socrates", is disfit to be lived by man.
D. "The disexamined life" said Socrates is unfit to be lived by man.

192.Choose the CORRECT sentence

A. You have often heard of me speeking of my friend Wahaj waheed a barrister here
B. You have often heard me speak of my friend, Wahaj Waheed, who is a barrister here.
C. You have often heard me. Speak off my friend, wahaj waheed who is a Barrister here
D. you have often heard me speak about my friend; wahaj waheed-a barrister hear

193.Choose the CORRECT sentence

A. The first space traveller was Dennis Tito from the United States.
B. The First Space Traveller was Dennis Tito, from, the United states
C. The first space traveller was Dennis Tito-from united State
D. The first space travaler was Dennis Tito, from the United States

194.Choose the CORRECT sentence

A. It was greatly good by you to proposd day's picnic at murree
B. It was awfully good by you to proposed a day's picnic in Murree.
C. It was awfully good of you to propose a day's picnic at Murree.
D. It was very good off you too propose days picnic in Murree

LOGICAL REASONING

195.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
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

196. 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 Dolphin; and people from most countries in the world have made their home 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 III is correct
B. Only I and II are correct
C. Only I and III are correct
D. Only II and III are correct

197. Observe the pattern and select the next term, in the sequence: JEQ, HEO, FEM

A. GFN
B. DEK
C. GEL
D. DFK

198. 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 11, Y is 24, Z is 22

199. 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. $(Q + R) \times P = 8$

200. All hammers are tools. Some tools are useless things. All useless things are trash. Which of the following conclusions is NECESSARILY TRUE given only the information above? 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