

MEDICAL PAPER 2014

1. A current of 20.0A flows through a battery with an emf of 6.20 V. If the internal resistance of the battery is 0.01Ω , what is the terminal voltage?
A) 6.40V B) 31.0V C) 1.24V D) 6.00V
2. Both DNA and RNA are synthesized by the process of:
A) Transcription B) Replication
C) Polymerization D) PCR
3. The cross between two dissimilar individuals is called:
A) Test cross B) Interbreeding
C) Epistasis D) Hybridization
4. 'CHUCKLE' mean:
A) Bouquet of flowers B) displeasing manner
C) suppressed laughter D) religious movement
5. Cell-wall of gram positive bacteria is composed of:
A) Glycolipids B) Glycoproteins
C) Lipoproteins D) Peptidoglycan
6. Shade loving plants are called:
A) Halophytes B) Mesophytes
C) Sciophytes D) Xerophytes
7. Which of the following is a Lewis acid?
A) CH_3OH B) AlCl_3 C) NH_3 D) CH_3OCH_3
8. Ethanol ($\text{CH}_3\text{CH}_2\text{OH}$) and dimethyl ether (CH_3OCH_3) are the best considered as:
A) Structural isomers B) Stereo isomers
C) Enantiomers D) Diastereomers
9. A tertiary carbon is bonded directly to:
A) 2 Hydrogens B) 2 Carbons
C) 3 Carbons D) 4 Carbons
10. Which derived unit below is equivalent to the SI unit for magnetic field strength, the tesla, T?
A) Nm/A B) NA/m C) N/Am D) Am/N
11. A certain radionuclide decays by emitting an α -particle. What is the difference between the atomic numbers of the parent and the daughter nuclides?
A) 1 B) 2 C) 4 D) 6
12. A wire of resistance 3.0Ω is stretched to twice its original length. The resistance of new wire will be:
A) 1.5Ω B) 3.0Ω C) 6.0Ω D) 32.0Ω
13. Any DNA molecule having foreign DNA is called:
A) Mutant B) Recombinant
C) Crossing over D) All of the above
14. The theory of uniformitarianism was proposed by:
A) Hutton and Tyell B) Lamarck
C) George Cuvier D) Darwin
15. 'Money grubbing' implies:
A) Money saving B) Money making
C) Money hunting D) Money spending
16. "Photo-phosphorylation" is:
A) ATP synthesis by food energy.
B) ATP synthesis by solar energy.
C) ATP synthesis by source of water.
D) ATP synthesis by source of NADH_2
17. Light absorbing pigments in photosystem first is:
A) P 600 B) P 680 C) P 700 D) P 760
18. When acetylene is passed through hot iron tube at 400°C , it gives:
A) Benzene B) Toluene
C) O-Xylene D) Metaxylene
19. Which of the following compounds will react with methyl magnesium iodide followed by acid hydrolysis to give ethyl alcohol?
A) Ethylene B) Acetone
C) Acetaldehyde D) Formaldehyde
20. Diethyl ether and Methyl propyl ether are:
A) Conformational isomers B) Metamers
C) Geometrical isomers D) Enantiomers
21. A wire of resistance 4Ω is bent into a circle. The resistance between the ends of a diameter of the circle is:
A) 4Ω B) 1Ω C) $1/4\Omega$ D) $1/16\Omega$
22. The state of thermal equilibrium between two systems is determined by equality of:
A) pressure B) Volume
C) Temperature D) Mass
23. In the direction indicated by an electric field line:
A) The potential must increase
B) The potential must decrease
C) The electric field strength must increase
D) The electric field strength must decrease
24. The enlarged lining epithelium cells connected with groups of developing spermatozoa in testes is:
A) Somatic cells B) Sertoli cells
C) Stem cells D) Totipotent cells
25. The hormone released by the posterior pituitary. That stimulates the contraction of uterine and mammary gland muscles is called:
A) Prolactin B) LH C) FSH D) Oxytocin
26. 'Get into a soup' implies:
A) Face a predicament B) play a game of cards
C) Swallow a fly in soup D) go for hot spicy soup
27. A study of communities in relation to environment is called:
A) Social ecology B) Synecology
C) Autoecology D) Heteroecology
28. In Eukaryotes, DNA replication proceeds at the rate of:
A) 50 base pairs per seconds
B) 40 base pairs per seconds
C) 20 base pairs per seconds
D) 30 base pairs per seconds
29. Fatty acids are:
A) Unsaturated dicarboxylic acid
B) Long chain aliphatic acid
C) Aromatic carboxylic acid
D) Aromatic dicarboxylic acid

30. Saponification of a fat:
 A) Always results in the formation of soaps.
 B) Results in the formation of esters.
 C) Results in the formation of waxes.
 D) Results in the formation of glycerol and soap.
31. Carbylamine test is given by:
 A) Primary amines B) Secondary amines
 C) Tertiary amines D) All of these
32. Of the following one particle belongs to lepton group:
 A) Neutrinos B) Protons
 C) Neutrons D) Mesons
33. Which of the following physical phenomena cannot be described only by the wave theory of the electromagnetic radiation?
 A) Diffractions B) Interference
 C) Photoelectric effect D) Polarization
34. Which of the following is the same unit as the farad?
 A) Ωs B) Ωs^{-1} C) $\Omega^{-1} s$ D) $\Omega^{-1} s^{-1}$
35. A complex form of learning that requires the manipulation of mental concepts to arrive at adaptive behavior is:
 A) Imprinting B) Insight learning
 C) Latent learning D) Trial & error learning
36. Which of the following is an enzyme lacking disease?
 A) PKU B) Alkaptonuria
 C) Anuria D) Dlluria
37. I eagerly look forward _____ seeing you again.
 A) at B) to C) on D) by
38. Acetic acid reacts with methyl alcohol in the presence of acid catalyst to give:
 A) Ethyl formate B) Ethyl acetate
 C) Methyl formate D) Methyl acetate
39. The characteristic reaction of carboxylic acid is:
 A) Electrophillic substitutions
 B) Nucleophillic substitution
 C) Electrophillic addition
 D) Nucleophillic addition
40. Which of the following compounds does not give iodoform test on reaction with I_2 and NaOH?
 A) Propanone B) Ethanol
 C) Butanone D) 2-Propanol
41. The gravitational field strength on the surface of the Earth is g . The gravitational field strength on the surface of a planet of twice the radius and the same density is:
 A) $4g$ B) $2g$ C) g D) $g/4$
42. Which experimental technique reduces the systematic error of the quantity being investigated?
 A) Adjusting an ammeter to remove its zero error before measuring a current
 B) Measuring several internodal distances on a standing wave to find the mean internodal distance.
 C) Measuring the diameter of a wire repeatedly and calculating the average.
 D) Timing a large number of oscillations to find a period.
43. A basketball is thrown upward along a parabolic path. What is the ball's acceleration at its highest point?
 A) 0 B) $1/2g$, horizontally
 C) g , upward D) g , downward
44. Conversion of alternating current to direct current is called:
 A) amplification B) rectification
 C) modulation D) both B & C
45. Operational amplifiers can amplify:
 A) ac only B) dc only
 C) both ac and dc D) None of them
46. A medical lab has a 16g of sample of radioactive isotopes. After 6 hours it was found that 12g of a sample have decayed. The half life of the isotope is:
 A) 12 hours B) 6 hours
 C) 2 hours D) 3 hours
47. You will be the perfect in charge _____ this group.
 A) of B) to C) by D) on
48. Which of the following substituents is an Ortho and Para director and ring deactivating?
 A) $-OH$ B) $-NH_2$ C) $-Cl$ D) $-OCH_3$
49. Which of the following compounds undergoes nitration most readily?
 A) Benzene B) Toluene
 C) Benzoic acid D) Nitrobenzene
50. Which of the following is not ferromagnetic substance:
 A) iron B) cobalt
 C) Nickel D) Barium
51. The sound waves and light waves cannot be both:
 A) polarized B) Reflected
 C) Reflected D) Diffracted
52. Diffraction is the name given to the:
 A) Addition of two coherent waves to produce a stationary wave pattern.
 B) Bending of waves round an obstacle
 C) Change of direction when waves cross the boundary between one medium and another.
 D) Splitting of white light into colours.
53. Two forces having magnitudes 3.5N and 5.5N are acting on a body. Which one of the following cannot be the resultant of their possible sum?
 A) 1.5 N B) 2.5 N C) 4.5 N D) 6.5 N
54. Which of the following play role in Biorhythm?
 A) MSH B) LH C) ADH D) Melatonin
55. Hypothalamus is a part of:
 A) Diencephalon B) Myelencephalon
 C) Metencephalon D) Telencephalon
56. 'ARABLE' means:
 A) Not grown since long B) Recently ploughed field
 C) watered the night before D) Fit for cultivation

57. Blue green algae, besides chlorophyll also possess another pigment known as:
 A) phycocyanin B) phycoerythrin
 C) phycobillirubin D) Phycobilliprotein
58. Milk sugar is pasteurized by heating for 15 seconds at the temperature of:
 A) 60 °C B) 71 °C C) 50 °C D) 80 °C
59. Which one of the following is most ionic?
 A) NaCl B) MgCl₂ C) KCl D) AlCl₃
60. The compound used in borax bead test for the detection of basic radicals to form colored bead is:
 A) H₂BO₂ B) (C₂H₅)₃BO₃
 C) Ca₂B₆O₁₁5H₂O D) Na₂B₄O₇10H₂O
61. Milk of magnesia is used for treatment of acidity in stomach, its formula is:
 A) Mg(OH)₂ B) MgSO₄ C) Ca(OH)₂ D) CaSO₄
62. A battery is marked 9.0V. What does this mean?
 A) Each coulomb of charge from the battery supplies 9.0J of electrical energy to the whole circuit.
 B) The battery supplies 9.0J to an external circuit for each coulomb of charge.
 C) The potential difference across any component connected to the battery will be 9.0V.
 D) There will always be 9.0V across the battery terminals
63. Using monochromatic light, interference fringes are produced on a screen placed a distance D from a pair of slits of separation a. the separation of the fringes is x. both a and D are now doubled. What is the new fringe separation?
 A) 2x B) x C) 3x D) 4x
64. Select the true statement about the amorphous solids:
 A) The amorphous substances have sharp melting point
 B) The amorphous substances do not have fixed melting point
 C) The amorphous substances have proper geometrical shapes.
 D) The particles in amorphous substances are arranged in an orderly manner.
65. Both NaNO₃ and CaCO₃ crystallize in Rhombohedral forms therefore they are:
 A) Allotropes B) Polymorphous
 C) Isomorphous D) None of these
66. Pure water freezes at 0 °C and boils at 100 °C at standard conditions. Calcium chloride was added to pure water. What do you expect about its freezing point and boiling point.
 A) No change in its freezing point and boiling point
 B) Freezing point increases and boiling point decreases.
 C) Freezing point increases and boiling point increases
 D) Freezing point decreases and boiling point increases
67. The internal energy of a fixed mass of an ideal gas depends on:
 A) Pressure but not volume or temperature.
 B) Temperature but not pressure or volume.
 C) volume but not pressure or temperature.
 D) Pressure and temperature but not volume.
68. A spring obeying Hook's law has an unstretched length of 50mm and a spring constant of 400 Nm⁻¹. What is the tension in the spring when its overall length is 70mm?
 A) 8.0N B) 28N C) 160N D) 400N
69. Which thermodynamic temperature is equivalent to 501.85 °C?
 A) 775.00 K B) 774.85 K C) 228.85K D) 228.70 K
70. Which of the following ions play important role in the transport of carbon dioxide?
 A) Sodium B) Potassium C) Bicarbonate D) Chloride
71. Incomplete double circulation is found in:
 A) Aves B) Fishes C) Amphibians D) Mammals
72. Choose the correct sentence.
 A) We bought some new clothing.
 B) We bought some new clothings.
 C) We bought some new piece of clothings
 D) We bought some new pieces of clothings.
73. If a hole is bored through the center of the earth and a pebble is dropped in it. Then it will:
 A) Execute SHM B) Drop to the other side
 C) Stop at the center of the earth
 D) None of the above
74. Which of the following animal is included in protostom?
 A) Sea horse B) Sea mouse C) sea cucumber D) Sea lion
75. How many waling legs are present in arachnids?
 A) 4 B) 6 C) 8 D) 10
76. A _____ child, she was soon bored in class; she already knew more mathematics than her junior school teachers.
 A) Contemporary B) Lethargic
 C) Obdurate D) Precocious
77. Sea-fungi is related to:
 A) Zygomycota B) Ascomycota
 C) Basidiomycota D) Deutromycota
78. Black bread mold is:
 A) Rhizopus B) Penicillium C) Mucor D) Yeast
79. Which of the statements about paper chromatography is not correct:
 A) Paper chromatography is an example of partition chromatography.
 B) Paper chromatography greatest use is in the separation of biological active systems.
 C) Paper chromatography is also applicable for the separation of some inorganic cations.
 D) Paper chromatography is always used for quantitative analysis.

80. Equal volume of different gases under same condition of temperature and pressure contain the same number of particles. The above statement is of:
 A) Avogadro's law B) Graham's Law
 C) Dalton's law D) Hund's rule
81. Which is the correct statement?
 A) The average kinetic energy of the molecules depends on the volume in which the gas is enclosed
 B) The average kinetic energy of the molecules in the gaseous state is proportional to the pressure.
 C) The average kinetic energy of the molecules in the gaseous state is proportional to the temperature.
 D) All of the above
82. In a vibrating cord the point where the particles are stationary is called:
 A) Crest B) Anti-node
 C) Node D) Trough
83. The minimum frequency of incident light required to emit photoelectrons from the metal surface is called:
 A) Critical frequency B) Intermediate frequency
 C) Work function D) Threshold frequency
84. A racing car accelerates uniformly through three gear changes with the following average speeds: 20ms^{-1} for 2.0s, 40ms^{-1} for 2.0s and 60ms^{-1} for 6.0s. What is the overall average speed of the car?
 A) 12ms^{-1} B) 13.3ms^{-1} C) 48ms^{-1} D) 40ms^{-1}
85. In octopus, the foot is modified into:
 A) Disc B) Arm C) Foot D) Siphon
86. Which of the following is included in deuterozoa?
 A) Brittle star B) Scorpion
 C) Chelopterus D) Unio
87. Choose the correct sentence:
 A) The lecture was long a bore and uninspired.
 B) The lecture was long a bore and uninspiring.
 C) The lecture was long boring and uninspiring
 D) The lecture was a long a bore and an uninspiring.
88. Murein cell-wall is composed of:
 A) Sugar and amino acids B) Calcium pectate.
 C) Glycoprotein D) Peptidoglycan
89. The genome of the most animals and higher plants is:
 A) DNA B) RNA
 C) Both DNA and RNA D) Either DNA or RNA
90. Which statement is wrong about the fourth state of matter known as plasma?
 A) The plasma contains equal amount of positive and negative charges and are almost neutral as a whole
 B) Plasma exists in the atmosphere of stars
 C) Plasma exists in the region around the sun
 D) There is less amount of matter in plasma state than the familiar, solid, liquid and gaseous states.
91. Hydrogen bonding does not exist in the molecule of:
 A) Hydrogen B) Proteins
 C) Carbohydrates D) Ammonia
92. Deficiency of which of the following causes diabetes?
 A) LH B) ACTH C) FSH D) ADH
93. 'ACQUAINTANCE' means a person whose:
 A) One loves but whom one cannot marry.
 B) One knows but who is not a close friend.
 C) One can depend on for help in hour of need.
 D) One can hire for attempting a question paper.
94. In angiosperms the megaspore develops into:
 A) Embryo-Sac B) Embryo
 C) Seed D) Male gametophyte
95. All of the following plants possess hermaphrodite flowers except:
 A) Lathyrus odoratus B) Solanum nigrum
 C) Zea mays D) Avena sativa
96. Choose the correct relation about the percent yield. It is equal to:
 A) $\frac{\text{Actual yield}}{\text{Theoretical yield}} \times 100$ B) $\frac{\text{Theoretical yield}}{\text{Actual yield}} \times 100$
 C) $\frac{\text{Actual yield}}{\text{Theoretical yield}} \times 10^6$ D) $\frac{\text{Actual yield}}{\text{Theoretical yield}} \times 10^3$
97. Vapour pressure of a liquid can be measured by the Barometric method and Manometric:
 A) Barometric method is more accurate than Manometric method.
 B) Manometric method is more accurate than Barometric method.
 C) Both are equally accurate and applicable.
 D) Both methods are in use but are not reliable.
98. Which is incorrect about ionization energy?
 A) Ionization energy depends upon the magnitude of nuclear charge.
 B) Ionization energy depends upon the atomic radius
 C) Ionization energy depends upon the shielding effect.
 D) Ionization energy does not depend upon the penetration effect of the inner orbital.
99. Several resistors are connected in parallel the resistance of their equivalent resistor will:
 A) Increase B) Decrease
 C) Not change D) None of these
100. Which of the following series lie in the visible region?
 A) Lyman B) Paschen
 C) Balmer D) Pfund
101. Kirchhoff's first law (KCL) is based upon the law of conservation of:
 A) Charge B) Energy
 C) Mass D) Momentum
102. Accessory pigments are:
 A) Red-Yellow-Green B) Red-Orange-Blue
 C) Orange-Blue-Green D) Red-Orange-Yellow

103. Chemiosmosis occurs in the:
A) Grana B) Stroma
C) Thylakoids D) InterGrana
104. Select the incorrect Statement:
A) Molecule may gain electron to form molecular anion.
B) Molecule may lose electron to form molecular cation.
C) Molecular cations are less abundant than molecular anions.
D) These molecular ions can be formed by passing high energy electron beam through a gas.
105. Choose the correct Statement:
A) The most direct and accurate method for determining atomic masses uses mass spectroscopy.
B) The indirect but accurate method for determining molecular masses uses mass spectroscopy.
C) Collision between the electrons and the atoms produces negative ions by absorption of electrons by atoms or molecules.
D) The first application of the mass spectroscopy was the demonstration to detect various isotopes of Argon.
106. The partition coefficient of Iodine distribution between two immiscible liquids, water and carbon (tetrachloride) is given below:

$$K = \frac{[I_2 \text{ in water}][I_2]}{[I_2 \text{ in } CCl_4]} = 1.17 \times 10^{-2}$$
 Choose the correct Statement about the system:
 A) Iodine is extracted from CCl_4 layer by water.
 B) Iodine is extracted from aqueous layer by CCl_4 .
 C) Iodine is more soluble in water than CCl_4 .
 D) The value of K depends on the amount of Iodine added.
107. During the experiment one measured the mass of Mosquito and found it 1.20×10^{-5} Kg. The numbers of significant figures in this case are:
A) Five B) One C) Two D) Three
108. The vectors A and B are such that $|A + B| = |A - B|$. Then the angle between the two vectors is:
A) 0° B) 90° C) 60° D) 180°
109. If two interozygous tall plants are crossed together the proportion of Phenotypically tall plants will be:
A) 50% B) 25% C) 75% D) 100%
110. A spore of Fern plant develops into:
A) Zygote B) Sporophyte
C) Gametophyte D) Prothallus
111. Choose the correct Statement:
 A) ${}_2Li^{+7} + {}_2He^+ \rightarrow {}_5B^{+10} + {}_1n^0$ ${}_2Li^{+7} + {}_2He^+ \rightarrow {}_3B^{+9} + {}_0^1P$
 B) ${}_4Be^{+9} + {}_2He^+ \rightarrow {}_6C^{+12} + {}_0^1n$ ${}_4Be^{+9} + {}_2He^+ \rightarrow {}_6C^{+12} + {}_1^1P$
112. Select the correct relation between wave and particle nature of radiation?
 A) $E = \frac{hc}{\lambda}$ B) $E = \frac{h\lambda}{c}$
 C) $E = \frac{hc}{h}$ D) $E = h\lambda c$
113. Change in concentration of a reactant is plotted against time and the slope $\frac{dx}{dt}$ determined. The value of $\frac{dx}{dt}$ are plotted against $(a - x)^2$ a straight line is obtained. It may be concluded that the reaction is:
A) First order B) Second order
C) Third order D) Zero order
114. Which statement correctly describes a nucleon?
A) Any atomic nucleus B) A radioactive atomic nucleus
C) A neutron or a proton.
D) A neutron proton or an electron.
115. An object travels at constant speed around a circle of radius 1.0m in 1.0s. What is the magnitude of its acceleration?
A) Zero B) 1.0 ms^{-1} C) $2\pi \text{ ms}^{-1}$ D) $4\pi^2 \text{ ms}^{-2}$
116. An alternating current '1/A' varies with time 't/s' according to the equation $I = 5 \sin(100\pi t)$. What is the mean power developed by the current in a resistive load of resistance 10Ω ?
A) 250W B) 500W C) 125W D) 160W
117. The oxygen carrying capacity of haemoglobin in humans when the blood is 100% oxygenated is:
A) 19.4 ml B) 19.6 ml C) 20 ml D) 21 ml
118. Which of the following fish have 14 pairs of gill slits?
A) Dog fish B) Lamprey C) Cat fish D) Ray fish
119. Liquid crystalline substances are used to locate tumors in the body because:
 A) These parts of the body are warmer than the surroundings.
 B) These parts of the body are cooler than the surroundings.
 C) These parts of the body are constantly increasing and decreasing with the temperature.
 D) None of the above.
120. The potential difference between a pair of similar. Parallel conducting plates is known. What additional information is needed in order to find the electric field strength between the plates?
 A) Separation of the plates.
 B) Separation and area of the plates.
 C) Permittivity of the medium separation of the plates.
 D) Permittivity of the medium separation and area of the plates.
121. In an AC capacitive circuit current and voltage phase relation is:
A) In-phase B) current leads voltage by 90°
C) Voltage leads current by 90°
D) Current leads voltage by 180°
122. A capacitor which has a capacitance of 1 farad will:
 A) Be fully charged in 1 second by a current of 1 ampere.
 B) Store 1 coulomb of charge at potential difference of 1 volt.
 C) Gain 1 joule of energy when 1 coulomb of charge is stored on it.
 D) Discharge in 1 second when connected across a resistor of resistance 3 ohm.

123. In which of the following pharynx opens directly into intestine?
 A) Planaria B) Earthworm
 C) Cockroach D) Snail
124. Bile is released from the gall bladder by the action of:
 A) Gastrin B) Cholecystokinin
 C) Secretin D) Renin
125. Choose the correct sentence:
 A) He will reach in two hours time.
 B) He will reach in two hour time.
 C) He will reach in two hour's time.
 D) He will reach in two hours' time.
126. To decrease the salt potentially the Guard cells absorb:
 A) Sodium Ions B) Magnesium ions
 C) Potassium ions D) Calcium ions
127. The product of light dependent reactions are:
 A) RUBP + ATP B) RUBP + PGAL
 C) NADPH + ATP D) PGAL + ATP
128. The committee dissented from the report's conclusions. The underlined word means:
 A) Differed B) Joined
 C) Deliberated D) Agreed
129. All of the following are gametophytes except:
 A) Club Mosses B) Funaria
 C) Liver-Worts D) Horn-Worts
130. All of the following are dioecious except:
 A) Ulva B) Funaria
 C) Marchantia D) Polytricum
131. The van der Waals equation of state for non-ideal gases differs from the ideal gas law in that it accounts for:
 I) The mass of each molecule of the gas.
 II) The volume of each molecule of the gas.
 III) The attractive forces between molecules of the gas.
 A) I, II and III B) I and II only
 C) I and III only D) II and III only
132. The statement that heat cannot spontaneously flow from a colder to a hotter body is a result of:
 A) Henry's law
 B) The first law of thermodynamics
 C) The second law of thermodynamics
 D) The third law of thermodynamics.
133. Rutherford's scattering experiment demonstrates:
 A) The existence of X-rays.
 B) The existence of α -particles.
 C) The mass to charge ratio of electron.
 D) The nuclear model of the atom.
134. What is the relationship between the intensity 'I' and the amplitude 'a' of a wave?
 A) $I \propto a$ B) $I \propto a^2$
 C) $I \propto 1/a$ D) $I \propto 1/a^2$
135. Which is a statement of the principle of conservation of momentum?
 A) Momentum is the product of mass and velocity.
 B) Momentum is conserved only in elastic collisions
 C) Momentum is conserved by all bodies in a collision.
 D) Momentum is conserved providing no external forces act.
136. A projectile is launched at 45° to the horizontal with initial kinetic energy E. Assuming air resistance to be negligible, what will be the kinetic energy of the projectile when it reaches its highest point?
 A) 0.50 E B) 0.71 E C) 0.87 E D) E
137. Coelenterates have hydrostatic skeleton except:
 A) Coral B) Sea anemone
 C) Hydra D) Jelly fish
138. Lungs are _____ in origin.
 A) Ectodermal B) Endodermal
 C) Mesodermal D) Preformed
139. The particular array of chromosomes that an individual possesses is called its:
 A) Genotype B) Phenotype
 C) Karyotype D) Genome
140. 'APPRAISE' means:
 A) Praise a man out of place.
 B) Tell a story at bed time.
 C) Evaluate the equality of
 D) Do shopping in a bazaar
141. An Ascus develops:
 A) 2-Ascospores B) 4-Ascospores
 C) 6-Ascospores D) 8-Ascospores
142. The cell wall of fungus like protista is composed of:
 A) Chitin B) Cellulose
 C) Murein D) Lignin
143. Which is incorrect statement?
 A) The ionic bonds are non directional in character.
 B) The crystals of covalent compounds are made up of molecules.
 C) The covalent bonds are rigid and non directional.
 D) Ionic compounds have high melting point and boiling point.
144. In which compound the bond angle is maximum?
 A) Methane B) Beryllium chloride
 C) Ammonia D) Boron trifluoride
145. Which is not used in calculating the lattice energy of crystalline solids?
 A) Haber process B) Born Haber cycle
 C) Hess's law D) Enthalpy changes
146. A mass accelerates uniformly when the resultant force acting on it:
 A) Is zero
 B) Is constant but not zero
 C) Increases uniformly with respect to time.
 D) Is proportional to the displacement of the mass from a fixed point.

147. The prefix 'pico' stands for:
 A) 10^6 B) 10^9
 C) 10^{-12} D) 10^{12}
148. The first artificial radioactive substance was made by bombarding aluminum $_{15}\text{Al}^{27}$, with α -particle. This produced an unstable isotope of phosphorus, $_{15}\text{P}^{30}$. What was the by product of this reaction?
 A) An α -particles B) A β -particles
 C) A γ -ray D) A neutron
149. Which species has no net charge?
 A) An α -particles B) An electron
 C) A proton D) A neutrino
150. If the coding sequence on the dna is AATIGCT, the sequence in the mRNA will be:
 A) AAUOCGT B) UUAACGA
 C) TTAACGA D) UUTTCGT
151. Gene and chromosomes show parallel behavior except:
 A) Number B) Inheritance
 C) Heredity D) Composition
152. 'Mortal stay' implies:
 A) Life that a man will have after death.
 B) Life spent in the company of friend.
 C) Life passed in hostel without studying.
 D) Life in this world which is short lived.
153. Chlorophyll is protected from intense light by:
 A) Phytochrome B) Phytoxinin
 C) Phytoeyanin D) Carotenoids
154. Replication of DNA occurs during:
 A) Interphase B) Prophase
 C) Metaphase D) Anaphase
155. Which of the following compound is assigned the octane number of 100?
 A) n-heptane B) n-octane
 C) 2,3,3-trimethyl pentane D) 2,2,4-trimethyl pentane
156. The major product of acid catalysed dehydration of 3-pentanol is:
 A) 1-pentane B) 2-Pentene
 C) 2-Methyle butane D) 3-Methyle butane
157. Which of the following compound will react most readily with bromine in CCl_4 ?
 A) 1-pentane B) 2-pentane
 C) 2-Methyle-1- butane D) 3-Methyle-1- butane
158. The half life of ^{22}Na is 2.6 years. If X grams of this sodium isotope are initially present how much is left after 13 years.
 A) $X/32$ B) $X/13$ C) $X/8$ D) $X/5$
159. Monochromatic light passes through two parallel slits in a screen and falls on a plate of film. The pattern produced is an example of:
 A) refraction and diffraction
 B) Interference and reflection.
 C) Interference diffraction
 D) Diffraction and polarization.
160. The senator is opposed _____ this new legislation.
 A) at B) to
 C) try D) on
161. Sodium chloride crystal structure is:
 A) Hexagonal B) Body centered cubic
 C) Face centered cubic D) Tetragonal
162. An acid is a substance which accepts:
 A) An electron pair B) Proton
 C) An electron D) Pair of proton
163. Carbon-14 is used in carbon dating. Which of the following species has both same number of neutrons and same number of electrons as in atom of c-14?
 A) $^{14}_7\text{N}^+$ B) $^{16}_8\text{N}^2$
 C) $^{17}_9\text{P}^+$ D) $^{18}_{14}\text{Si}$
164. A student connect a 6 volt battery and a 12 volt battery in series and then connects this combination across a 10Ω resistor. What is the current in the resistor?
 A) 0.8 A B) 1.8 A
 C) 0.9 A D) 2.6 A
165. A step-up transformer is one that:
 A) Increase the power B) Increase the current
 C) Increase the voltage D) Increase the energy
166. The waves which do not require any medium for their propagation are called:
 A) Mechanical waves B) Sound waves
 C) Tidal waves D) electromagnetic waves
167. Add some milk and sugar _____ the afternoon tea.
 A) with B) in
 C) on D) to
168. In vacuum all electromagnetic waves have the same:
 A) Speed B) Energy
 C) Frequency D) wavelength
169. Human arm is homologous with:
 A) Sea flipper B) Octopus Tentacle
 C) Bird wing D) Both A and C
170. A specific nucleotide sequence on DNA molecule to which RNA polymerase attaches to initiate transcription of mRNA from a gene is called:
 A) Poly genes B) Genome
 C) Promoter D) Plectorpy
171. 'Break the ice' implies:
 A) Walk on ice-sheet B) Swallow ice-cube
 C) Chisel an ice-block D) to make beginning
172. All of the following belong to phylum Protista except:
 A) Protomycota B) Gymnomycota
 C) Oomycota D) Deutromycota
173. A special protein carrier in plasma membrane is:
 A) Catalase B) Lipase
 C) Permease D) Arginase
174. Reduction of acetaldehyde with H_2/Ni gives:
 A) Ethanol B) Ethanoic acid
 C) Ethane D) Ethylene

175. Which of the following compounds will give a positive test with Fehling's solution?
A) Acetone B) Ethyl acetate
C) Formaldehyde D) Acetic acid
176. Choose the compound in which hydrogen bonding is not possible:
A) H_2O B) HCl
C) CH_3COOH D) CH_3OCH_3
177. A ball is dropped from the roof of a very tall building. What is its velocity after falling for 5.0s?
A) 1.96 m/s B) 9.80 m/s C) 49.0 m/s D) 98.0 m/s
178. In liquid metal fast breeder reactor the moderator used is:
A) Graphite B) Heavy water
C) Boron rods D) Not required.
179. The de-Broglie wavelength of a rifle bullet of mass 0.02 kg which is moving at a speed of $300 ms^{-1}$ is (where $h = 6.63 \times 10^{-34} Js$)
A) $7.3 \times 10^{-34} m$ B) $1.1 \times 10^{-34} m$
C) $1.8 \times 10^{-35} m$ D) $9.9 \times 10^{-34} m$
180. The theory of new creation was composed by:
A) George Cuvier B) James Hutton
C) Lovis Agassiz D) Wallace
181. The bone dissolving cells are called:
A) Osteoclast B) Osteoblasts
C) Osteocytes D) Fibroblast
182. An 'elegy' is a poem written:
A) In the memory of little child
B) On the death of someone dear.
C) On the sighting of an old tutor
D) In the love of dear sweetheart.
183. The temperature required for vernalization is approximately:
A) $2^\circ C$ B) $3^\circ C$ C) $4^\circ C$ D) $10^\circ C$
184. The response of a plant related to the length of the day and night is called:
A) Photo-receptor B) Photo-taxis
C) Photo-tropism D) Photo-Periodism
185. Which of the following polymers contain nitrogen?
A) PVC B) Terylene
C) Nylon D) Teflon
186. Which one of the following does not exist?
A) HBO_2 B) HFO_2
C) H_3PO_3 D) $HBrO_2$
187. Select the strongest acid the P_{ka} values are given:
A) HI , $P_{ka}=10$ B) HCN , $P_{ka}=9.4$
C) H_2SO_4 , $P_{ka} = 1.8$ D) HNO_3 , $P_{ka} = 3.0$
188. An electron in a hydrogen atom makes a transition from an energy level with energy E_1 to one with energy E_2 and simultaneously emits a photon. The wavelength of the emitted photon is:
A) $hc/(E_1 - E_2)$ B) $h/(E_1 - E_2)$
C) $h/c(E_1 - E_2)$ D) $(E_1 - E_2)/hc$
189. The electric field between the plates of an isolated air-spaced parallel- plate capacitor is E . What is the field between the plates after immersing the capacitor in a liquid of relative permittivity 10?
A) $\sqrt{10} E$ B) $E/\sqrt{10}$
C) $10E$ D)
190. He was arrested and charged _____ murder
A) with B) into
C) over D) about
191. Providing heat to the following reaction causes it shift to the right
 $CO_{2(g)} + 2H_2O_{(g)} \rightleftharpoons CH_{4(g)} + 2O_{2(g)}$
The reaction can therefore be described as:
A) Spontaneous B) Adiabatic
C) Endothermic D) Exothermic
192. The major sources responsible for the presence of NO , N_2O , NO_2 in the atmosphere is / are:
A) Fertilizers
B) Biological decay of dead organism
C) Fossil fuel combustion D) All of these
193. Polyhydroxy aldehydes or ketones are known as:
A) Carbohydrates B) Proteins
C) Lipids D) Vitamins
194. A shot is fired at an angle of 60° to the horizontal with kinetic energy E . If air resistance is ignored, the kinetic energy at the top of the trajectory is:
A) Zero B) $E/8$
C) $E/4$ D) $E/2$
195. The displacement 'x' of a particle at time 't' is given by $x = 10 \sin 4t$. The particle oscillates with period.
A) $\pi/10s$ B) $\pi/5s$
C) $\pi/4s$ D) $\pi/2s$
196. By how many times does doubling the diameter of a wire and making it 10 times longer increase its resistance?
A) 2.5 times B) 5 times
C) 10 times D) 30 times
197. _____ second thoughts I opted for a cold drink
A) At B) By
C) On D) For
198. Sucrose is considered as:
A) Monosaccharides B) Disaccharides
C) Polysaccharides D) None of these
199. High molecular mass compound was hydrolyzed the product was analyzed and found to be amino acid. The compound is:
A) Protein B) Carbohydrate
C) Lipid D) Vitamins
200. The enzymes functions are optimum at:
A) Specific Temperature B) Specific PH
C) Specific co-enzyme D) All the above