CHEMISTRY

46. Which one of the following compounds shows the presence of intramolecular hydrogen bond?
A. H_2O_2
B. HCN
C. Cellulose
D. Concentrated acetic acid

47. The molar conductivity of a 0.5 mol/dm^3 solution of $AgNO_3$ with electrolytic conductivity of 5.76 x 10^{-3} S cm^{-1} at 298 K is
A. 2.88 S cm^2/mol B. 11.52 S cm^2/mol
C. 0.086 S cm^2/mol D. 28.8 S cm^2/mol

48. The decomposition of phosphine (PH_3) on tungsten at low pressure is a first-order reaction. It is because the
A. rate is proportional to the surface coverage
B. rate is inversely proportional to the surface coverage
C. rate is independent of the surface coverage
D. rate of decomposition is very slow

49. The coagulation values in millimoles per litre of the electrolytes used for the coagulation of As_2S_3 are given below
I. (NaCl)=52 II. ($BaCl_2$)=0.69
III. ($MgSO_4$)=0.22
The correct order of their coagulating power is
A. I> II> III B. II> I> III
C. III> II> I D. III> I> II

50. During the electrolysis of molten sodium chloride, the time required to produce 0.10 mol of chlorine gas using a current of 3 amperes is
A. 55 minutes B. 110 minutes
C. 20 minutes D. 330 minutes

51. How many electrons can fit in the orbital for which n=3 and I=1?
A. 2 B. 6
C. 10 D. 14

52. For a sample pf perfect gas when its pressure is changed isothermally from p_i to p_f, the entropy change is given by
A. $\Delta S = nR \ln\left(\frac{p_f}{p_i}\right)$ B. $\Delta S = nR \ln\left(\frac{p_i}{p_f}\right)$
C. $\Delta S = nRT \ln\left(\frac{p_f}{p_i}\right)$ D. $\Delta S = RT \ln\left(\frac{p_i}{p_f}\right)$

53. The van't Hoff factor (i) for a dilute aqueous solution of the strong electrolyte barium hydroxide is
A. 0 B. 1
C. 2 D. 3

54. The percentage of pyridine (C_5H_5N) that forms pyridinium ion ($C_5H_5N^+H$) ion a 0.10 M aqueous pyridine solution (k_b for C_5H_5N = 1.7 x 10^{-9}) is
A. 0.0060% B. 0.013%
C. 0.77% D. 1.6%

55. In calcium fluoride, having the fluorite structure, the coordination numbers for calcium ion(Ca^{2+}) and fluoride ion(F^-) are
A. 4 and 2 B. 6 and 6
C. 8 and 4 D. 4 and 8

56. If the E^0_{cell} for a given reaction has a negative value, which of the following gives correct relationship for the values of ΔG^0 and K_{eq}?
A. $\Delta G^0>0$; $k_{eq}<1$ B. $\Delta G^0>o$; $k_{eq}>1$
C. $\Delta G^0<o$; $k_{eq}>1$ D. $\Delta G^0<o$; $k_{eq}<1$

57. Which one of the following is incorrect for ideal solution?
A. $\Delta H_{mix} = 0$
B. $\Delta U_{mix} = 0$
C. $\Delta P = P_{obs} - P_{calculate\ by\ Raoult's\ law} = 0$
D. $\Delta G_{mix} = 0$

58. The solubility of AgCl (s) with solubility product 1.6 x 10^{-10} in 0.1 M NaCl solution would be
A. 1.26 x 10^{-5} M B. 1.6 x 10^{-9} M
C. 1.6 x 10^{-11} M D. zero

59. Suppose the elements X and Y combine to form two compounds XY_2 and X_3Y_2. When 0.1 mole XY_2 weighs10 g and weighs 10 g and 0.05 mole of X_3Y_2 weight 9 g, the atomic weights of X and Y are
A. 40, 30 B. 60, 40
C. 20, 30 D. 30, 20

60. The number of electrons delivered at the cathode during electrolysis by a current of 1 ampere in 60 seconds is (charge on electron = 1.60 x 10^{-19} C)
A. 6 x 10^{23} B. 6 x 10^{20}
C. 3.75 x10^{20} D. 7.48 x 10^{23}

61. Boric acid is an acid because its molecule
A. contains replaceable H^+ ion
B. gives up a proton
C. accepts OH^- from water releasing proton
D. combines with proton from water molecule

62. AlF_3 is soluble in HF only in presence of KF. It is due to the formation of
A. $K_3[AlF_3H_3]$ B. $K_3[AlF_6]$
C. AlH_3 D. $K[AlF_3H]$

63. Zinc can be coated on iron to product galvanised iron but the reverse is not possible. It is because

A. zinc is lighter than iron
B. zinc has lower melting point that iron
C. zinc has lower negative electrode potential than iron
D. zinc has higher negative electrode potential than iron

64. The suspension of slaked lime in water is known as
A. lime water
B. quicklime
C. milk of lime
D. aqueous solution of slaked lime

65. The hybridisations of atomic orbitals of nitrogen in NO_2^+, NO_3^- and NH_4^+ respectively
A. sp, sp^3 and sp^2 B. sp^2, sp^3 and sp
C. sp, sp^2 and sp^3 D. sp^2, sp and sp^3

66. Which of the following fluoro-compounds is most likely to behave as a Lewis base?
A. BF_3 B. PF_3
C. CF_4 D. SiF_4

67. Which of the following pairs of ions is isoelectronic and isostructural?
A. CO_3^{2-}, NO_3^-
B. ClO_3^-, CO_3^{2-}
C. SO_3^{2-}, NO_3^-
D. ClO_3^-, SO_3^{2-}

68. In context with beryllium, which one of the following statements is incorrect?
A. it is rendered passive by nitric acid
B. it forms Be_2C
C. Its salts rarely hydrolyse
D. Its hydride is electron-deficient and polymeric

69. Hot concentrated sulphuric acid is a moderately strong oxidising agent. Which of the following reaction does not show oxidising behaviour?
A. $Cu + 2H_2SO_4 \rightarrow CuSO_4 + SO_2 + 2H_2O$
B. $3S + 2H_2SO_4 \rightarrow 3SO_2 + 2H_2O$
C. $C + 2H_2SO_4 \rightarrow CO_2 + 2SO_2 + 2H_2O$
D. $CaF_2 + H_2SO_4 \rightarrow CaSO_4 + 2HF$

70. Which of the following pairs of d-orbitals will have electron density along the axes?
A. d_z^2, d_{xz} B. d_{xz}, d_{yz}
C. d_z^2, d_x^2-$_y^2$ D. d_{xy}, d_x^2-$_y^2$

71. The correct geometry and hybridisation for XeF_4 are
A. octahedral, sp^3d^2
B. trigonal bipyramidal, sp^3d
C. planar triangle, sp^3d^3
D. square planar, sp^3d^2

72. Among the following which one is wrong statement?
A. PH_5 and $BiCl_5$ do not exist
B. pπ-dπ bonds are present in SO_2
C. SeF_4 and CH_4 have same shape
D. I_3^+ has bent geometry

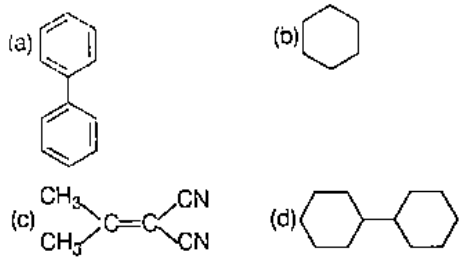
73. The correct increasing order of trans-effect of the following species is
A. $NH_3 > CN^- > Br^- > C_6H_5^-$
B. $CN^- > C_6H_5^- > Br^- > NH_3$
C. $Br^- > CN^- > NH_3 > C_6H_5^-$
D. $CN^- > Br^- > C_6H_5^- > NH_3$

74. Which one of the following statements related to lanthanons is incorrect?
A. Europium shows +2 oxidation state
B. the basicity decreases as the ionic radius decreases from Pr to Lu
C. All the lanthanons are much more reactive than aluminium
D. Ce (+4) solution are widely used as oxidising agent in volumetric analysis.

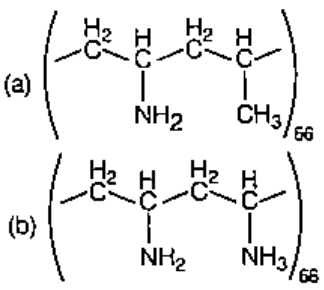
75. Jahn-Teller effect is not observed in high spin complex of
A. d^7 B. d^8
C. d^4 D. d^9

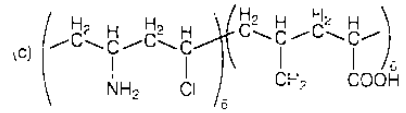
76. Which one of the following can be used as the halide component for Friedel-Crafts reaction?
A. Chlorobenzene
B. Bromobenzene
C. Chloroethene
D. Isopropyl chloride

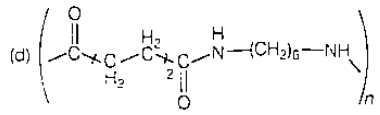
77. In which of the following molecules, all atoms are coplanar?



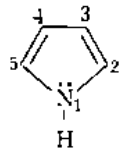
78. Which one of the following structures represents nylon 6, 6 polymers?



(c) 

(d) 

79. In pyrrole

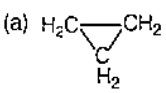
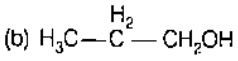


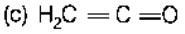
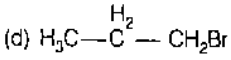
The electron density is maximum on

A. 2 and 3 B. 3 and 4

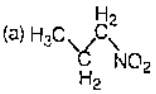
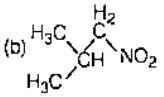
C. 2 and 4 D. 2 and 5

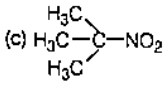
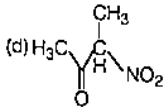
80. Which of the following compounds shall not produce propane by reaction with HBr followed by elimination or direct only elimination reaction?

(a)  (b) 

(c)  (d) 

81. Which one of the following nitro-compounds does not react with nitrous acid?

(a)  (b) 

(c)  (d) 

82. The central dogma of molecular genetics states that the genetic information flows from

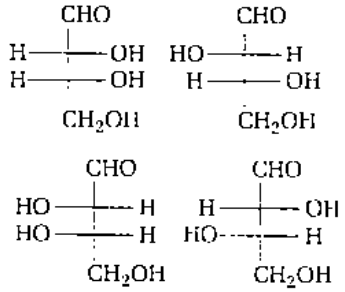
A. amino acids→proteins→DNA

B. DNA→carbohydrates→proteins

C. DNA→RNA→proteins

D. DNA→RNA→carbohydrates

83. The correct corresponding order of nanes of four aldoses with configuration given below



Respectively, is

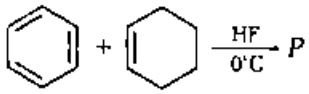
A. L-erythrose, L-threose, L-erythrose, D-threose

B. D-threose, D-erythrose, L-threose, L-erythrose,

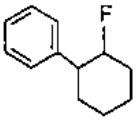
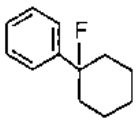
C. L-erythrose, L-threose, D-erythrose, D-threose,

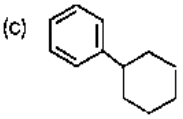
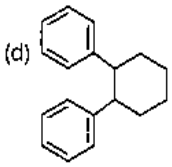
D. D-erythrose D-threose, L-erythrose, L-threose,

84. In the given reaction

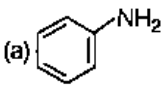
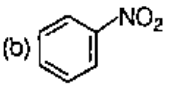


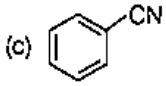
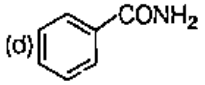
The product P is

(a)  (b) 

(c)  (d) 

85. A given nitrogen-containing aromatic compound A reacts with Sn/HCl, followed by HNO_2 to given an ustable compound B. B, onn treatment with phenol, forms a beautiful coloured compound C with the molecular formula $C_{12}H_{10}N_2O$. The structure of compound A is

(a)  (b) 

(c)  (d) 

86. Consider the reaction

$CH_3CH_2CH_2Br + NaCN \rightarrow CH_3CH_2CH_2CN + NaBr$

This reaction will be the fastest in

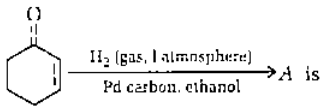
A. ethanol

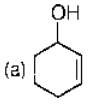
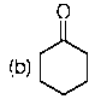
B. methanol

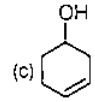
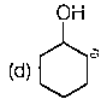
C. N, N'-dimethylformamide (DMF)

D. water

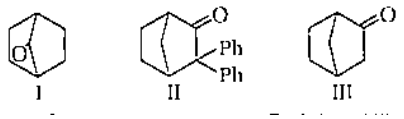
87. The correct structure of the product A formed in the reaction



(a)  (b) 

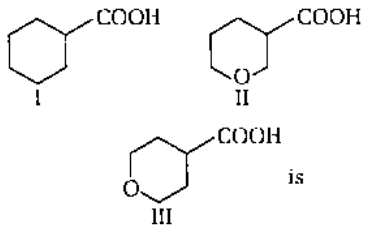
(c)  (d) 

88. Which among the given molecules can exhibit tautomerism?



A.III only B. Both I and III
C. Both I and II D. Both II and III

89. The correct order of strengths of the carboxylic acids



is

A. I > II > III B. II> III> I
C. III> II> I D. II> I> III

90. The compound that will react most readily with gaseous bromine has the formula
A. C_3H_6 B. C_2H_2
C. C_4H_{10} D. C_2H_4

BIOLOGY

91. Which of the following is wrong for fungi?
A. They are eukaryotic
B. All fungi possess a purely cellulosic cell wall
C. They are heterotrophic
D. They are both unicellular and multicellular

92. Methanogens belong to
A. eubacteria B. archaebacteria
C. dinoflagellates D. slime moulds

93. Select the wrong statement
A. The walls of diatoms are easily destructible
B. 'Diatomaceous earth' is formed by the cell walls of diatoms
C. Diatoms are chief produces in the oceans
D. Diatoms are microscopic and float passively in water

94. The label of herbarium sheet does not carry information on
A. date of collection B. name of collector
C. local names D. height of the plant

95. Conifers are adapted to tolerate extreme environmental conditions because of
A. broad hardy leaves
B. superficial stomata
C. thick cuticle
D. the presence of vessels

96. Which of the following statement is wrong?
A. Algae increase the level of dissolved oxygen in the immediate environment
B. Algin is obtained from red algae and carrageenan from brown algae
C. Agar-Agar is obtained from Gelidium and Gracilaria
D. Laminaria and Sargassum are used as food

97. The term 'polyadelphous' is related to
A. gynoecium B. androecium
C. corolla D. calyx

98. How many plants among Indigofera, Sesbania, Salvia, Allium, Aloe, mustard, groundnut, radish, gram and turnip have stamens with different lengths in their flowers?
A. Three B. Four
C. Five D. Six

99. Radial system is found in the flowers of
A. Brassica B.Trifolium
C. Pisum D. Cassia

100. Free-central placentation is found in
A. Dianthus B. Argemone
C. Brassica D. Citrus

101. Cortex is the region found between
A. epidermis and stele
B. pericycle and endodermis
C. endodermis and pith
D. endodermis and vascular bundle

102. The balloon-shaped structures called tylose
A. originate in the lumen of vessels
B. characterise the sapwood
C. are extensions of xylem parenchyma cells into vessels
D. are linked to the ascent of sap through xylem vessels

103. A non-proteinaceous enzyme is
A. lysozyme B. ribozyme
C. ligase D. deoxyribonuclease

104. Select the mismatch
A. Gas vacuoles - Green bacteria Cells
B. Large central vacuoles - Animal cells
C. Protists - Eukaryotes
D. Methanogens - Prokaryotes

105. Select the wrong statement
A. Bacterial cell wall is made up to peptidoglycan
B. Pili and fimbriae are mainly involved in motility of bacterial cells
C. Cyanobacteria lack flagellated cells
D. Mycoplasma is a wall-less microorganism

106. A cell organelle containing hydrolytic enzyme is
A. lysosome B. microsome
C.ribosome D. mesosome

107. During cell growth, DNA synrhesis takes place in
A. S-phase B. G_1-phase

C. G_2-phase D. M-phase

108. Which of the following biomolecules is common to respiration-mediated breakdown of fats, carbohydrates and proteins?
A. Glucose-6-phosphate
B. Fructose 1, 6-bisphosphate
C. Pyruvic acid
D. Acetyl Co-A

109. A few drops of shape were collected by cutting across a plant stem by a suitable method the sap was tested chemically. Which one of the following test results indicates that it is phloem sap?
A. Acidic
B. Alkaline
C. Low refractive index
D. The absence of sugar

110. You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots?
A. IAA and gibberellins
B. Auxin and cytokinin
C. Auxin and abscisic acid
D. Gibberellin & abscisic acid

111. Phytochrome is a
A. Flavoprotein B. glycoprotein
C. lipoprotein D. Chromoprotein

112. Which is essential for the growth of root tip?
A. Zn B. Fe
C.Ca D. Mn

113. The process which makes major difference between C_3 and C_4 plants is
A. glycolysis B. Calvin cycle
C. photorespiration D. respiration

114. Which of the following statements is not correct?
A. Offspring produced by the sexual reproduction are called clone
B. Microscopic, motile asexual reproductive structures are called zoospores
C. In patoto, banana and ginger, the plantlets arise from the internodes present in the modified stem
D. water hyacinth, growing in the standing water, drains oxygen from water that leads to the death of fishes

115. Which one of the following generates new genetic combinations leading to variation?
A. Vegetative reproduction
B. Parthenogenesis
C. Sexual reproduction
D. Nucellar polyembryong

116. Match column I with column II and select the correct option using the codes given below

Column I	Column II
I. Pistils fused together	1. Gametogenesis
II. formation of gemetes	2. Pistillate
III.Hyphae of higher ascomycetes	3.Syncarpous
IV.Unisexula female flower	4. Dikaryotic

Codes

	I	II	III	IV
A.	4	3	2	1
B.	2	1	4	3
C.	1	2	4	3
D.	3	1	4	2

117. In majority of angiosperms
A. egg has a filiform apparatus
B. there are numerous antipodal cells
C. reduction division occurs in the megaspore mother cells
D. a small central cell is present in the embryo sac

118. Pollination in water hyacinth and water lily is brought about by the agency of
A. water B. insects or wind
C. birds D. bats

119. The ovule of an angiosperm is technically equivalent to
A. megasporangium
B. megasporophyll
C. megaspore mother cell
D. megaspore

120. Taylor conducted the experiments to prove semi-conservative mode of chromosome replication on
A. Vinca rosea
B. Vicia faba
C. Drosophila melanogaster
D. E. coli

121. The mechanism that causes a gene to move from one linkage group to another is called
A. inversion B. duplication
C. translocation D. crossing-over

122. The equivalent of a structural gene is
A. muton B. cistron
C. operon D. recon

123. A true breeding plant is
A. one that is able to breed on its own
B. produced due to cross-pollination among unrelated plants
C. near homozygous and produces offspring of its own kind

D. always homozygous recessive in its genetic constitution

124. Which of the following rRNAs act as structural RNA as well as ribozyme in bacteria?
A. 5 srRNA B. 18 srRNA
C. 23 srRNA D. 5.8 srRNA

125. Stirred-tank bioreactors have been designed for
A. purification of product
B. addition of preservatives to the product
C. availability of oxygen throughout the process
D. ensuring anaerobic conditions in the culture vessel

126. A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using
A. Eco RI B. taq polymerase
C. polymerase III D. ligase

127. Which of the following is not a component of downstream processing?
A. separation B. Purification
C. Preservation D. Expression

128. Which of the following restriction enzymes produces blunt ends?
A. Sal I B. Eco RV
C. Xho D. Hind III

129. Which kind of therapy was given in 1990 to a four-year-old girl with Adenosine Deaminase (ADA) deficiency?
A. Gene therapy B. Chemotherapy
C. Immunotherapy D. Radiation therapy

130. How many hotspots of biodiversity in the world have been identified till date by Norman Myers?
A. 17 B. 25
C. 34 D. 43

131. The primary producers of the deep-sea hydrothermal vent ecosystem are
A. green algae B. chemosynthetic bacteria
C. blue-green algae D. coral reefs

132. Which of the following is correct for r-selected species?
A. Large number of progeny with small size
B. Large number of progeny with large size
C. Small number of progeny with small size
D. Small number of progeny with large size

133. If '+' sign is assigned to beneficial interaction, '-' sign to detrimental and '0' sign to neutral interaction then the population interaction represented by '+' '-'refers to
A. mutualism B. amensalism
C. commensalism D. parasitism

134. Which of the following is correctly matched?
A. Aerenchyma - Opuntia
B. Age pyramid - Biome
C. Partheniumhysterophorus -Threat to biodiversity
D. Stratification - Population

135. Read List contains data or information on
A. all economically important plants
B. plants whose products are in international trade
C. threatened species
D. marine vertebrates only

136. Which of the following sets of diseases is caused by bacteria?
A. Cholera and tetanus
B. Typhoid and smallpox
C. Tetanus and mumps
D. Herpes and influenza

137. Match column I with column II for housefly classification and select the correct option using the codes given below:

Column I	Column II
I. Family	1. Diptera
II. Order	2. Arthropoda
III.Class	3.Muscidae
IV.Phylum	4. Insecta

Codes

	I	II	III	IV
A.	3	1	4	2
B.	3	2	4	1
C.	4	3	2	1
D.	4	2	1	3

138. Choose the correct statement
A. All mammals are viviparous
B. All cyclostomes do not possess jaws and paired fins
C. All reptiles have a three-chambered heart
D. All pisces have gills covered by an operculum

139. Study the four statement (I-IV) given below and select the two correct ones out of them:
I. Definition of biological species was given by Ernst Mayr
II. Photoperiod does not affect reproduction in plants.
III. Biomial nomenclature system was given by RH Whittaker.
IV. In unicellular organisms, reproduction is synonymous with growth.
The two correct statements are
A. II and III B. III and IV
C. I and IV D. A and II

140. In male cockroaches, sperms are stored in which part of reproductive system?

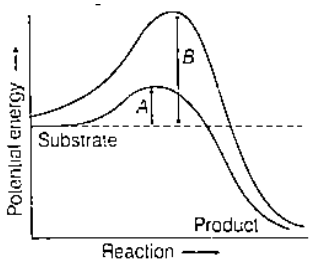
A. Seminal vesicles B. Mushroom glands
C. Testes D. Vas deferens

141. Smooth muscles are
A. involuntary, fusiform, non-striated
B. voluntary, multinucleate, cylindrical
C. involuntary, cylindrical, striated
D. voluntary, spindle-shaped, unincleate

142. Oxidative phosphorylation is
A. formation of ATP by transfer of phosphate group from a substrate to ADP
B. oxidation of phosphate group in ATP
C. addition of phosphate group to ATP
D. formation of ATP by energy released from electron removed during substrate oxidation

143. Which of the following is the least likely be involved in stabilising the three dimensional folding of most proteins?
A. Hydrogen bonds
B. Electrostatic interaction
C. Hydrophobic interaction
D. Ester bonds

144. Which of the following describes the given graph correctly?



A. Endothermic reaction with energy A in the presence of enzyme and B in the absence of enzyme
B. Exothermic reaction with energy A in the presence of enzyme and B in the absence of enzyme
C. Endothermic reaction with energy A in the absence of enzyme and B in the presence of enzyme
D. Exothermic reaction with energy A in the absence of enzyme and B in the presence of enzyme

145. When cell has stalled DNA replication fork, which checkpoint should be predominantly activated?
A. G_1/S B. G_2/M
C. M D. Both G_1/M and M

146. Match the stages of meiosis in column I to their characteristic feature in column II and select the correct option using the codes given below:

Column I	Column II
I. Pachytene	1. Pairing of homologous chromosomes
II. Metaphase-I	2. Terminalisation of chiasmata
III. Diakinesis	3.Crossing-over takes place
IV.Zygotene	4. Chromosomes align at equatorial plate

Codes

	I	II	III	IV
A.	3	4	2	1
B.	1	4	2	3
C.	2	4	3	1
D.	4	3	2	1

147. Which hormones do stimulate the production of pancreatic juice and bicarbonate?
A. Angiotensin and epinephrine
B. Gastrin and insulin
C. Cholecystokinin and secretin
D. Insulin and glucagon

148. The partial pressure of oxygen in the alveoli of the lungs is
A. equal to that in the blood
B. more than that in the blood
C. less than that in the blood
D. less than that of carbon dioxide

149. Choose the correct statement
A. Nociceptors respond to changes in pressure
B. Meissner's corpuscles are thermoreceptors
C. Photoreceptors in the human eye are depolarised during darkness and become hyperpolarised in response to the light stimulus
D. Receptors do not produce graded potentials

150. Graves' disease is caused due to
A. hyposecretion of thyroid gland
B. hypersecretion of thyroid gland
C. hyposecretion of adrenal gland
D. hypersecretion of adrenal gland

151. Name the ion responsible for unmasking of active sites for myosin for cross-bridge activity during muscle contraction.
A. Calcium B. Magnesium
C. Sodium D. Potassium

152. Name the blood cells, whose reduction in number can cause clotting disorder, leading to excessive loss of blood from the body.
A. Erythrocytes B. Leucocytes
C. Neutrophils D. Thrombocytes

153. Name a peptide hormone which acts mainly on hepatocytes, adipocytes and enhances cellular glucose uptake and utilisation
A. Insulin B. Glucagon
C. Secretin D. Gastrin

154. Osteoporosis, an age-related disease of skeletal system, may occur due to

A. immune disorder affecting neuromuscular junction leading to fatigue.
B. high concentration of Ca^{++} and Na^{+}
C. decreased level of oestrogen
D. accumulation of uric acid leading to inflammation of joints

155. Serum differs from blood in
A. lacking globulins
B. lacking albumins
C. lacking clotting factors
D. lacking antibodies

156. Lungs do not collapse between breaths and some air always remains in the lungs which can never be expelled because
A. there is a negative pressure in the lugs
B. there is a negative intrapleural pressure pulling at the lung walls
C. there is a positive intrapleural pressure
D. pressure in the lungs in higher than the atmospheric pressure

157. The posterior pituitary gland is not a 'true' endocrine gland because
A. it is provided with a duct
B. it only stores and releases hormones
C. it is under the regulation of hypothalamus
D. it secretes enzymes

158. The part of nephron involved in active reabsorption of sodium is
A. distal convoluted tubule
B. proximal convoluted tubule
C. Bowman's capsule
D. descending limb of Henle's loop

159. Which of the following is hormone-releasing IUD?
A. LNG-20 B. Multiload-375
C. Lippes loop D. Cu-7

160. Which of the following is incorrect regarding vasectomy?
A. No sperm occurs in seminal fluid
B. No sperm occurs in epididymis
C. Vasa deferentia is cut and tied
D. Irreversible sterility

161. Embryo with more than 16 blastomeres formed due to in vitro fertilisation is transferred into
A. uterus B. Fallopian tube
C. fimbriae D. cervix

162. Which of the following depicts the correct pathway of transport of sperms?
A. Rete testis → Efferent ductules→ Epidiymis→Vas deferens
B. Rete testis → Epidiymis→ Efferent ductules→ Vas deferens
C. Rete testis → Vas deferens→ Efferent ductules→ Epidiymis
D. Efferent ductules→ Rete testis → Vas deferens→ Epidiymis

163. Match column I with column II and select the correct option using the codes given below.

Column I	Column II
I. Mons pubis	1. Embryo formation
II. Antrum	2. Sperm
III. Trophectoderm	3.Female external genitalia
IV. Nebenkern	4. Graafian follicle

Codes

	I	II	III	IV
A.	3	4	2	1
B.	3	4	1	2
C.	3	1	4	2
D.	1	4	3	2

164. Several hormones like hCG, hPL, oestrogen, progesterone are produced by
A. ovary B. placenta
C. Fallopian tube D. pituitary

165. If a colour-blind man marries a women who is homozygous for normal colour vision, the probability of their son being colour blind is
A. 0 B. 0.5
C. 0.75 D. 1

166. Genetic drift operates is
A. small isolated population
B. large isolated population
C. non-reproductive population
D. slow reproductive population

167. In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by
A. p^2 B. 2pq
C. pq D. q^2

168. The chronological order of human evolution from early to the recent is
A. Austalopithecus→Ramapithecus→Homo habilis→Homo erectus
B. Ramapithecus→ Austalopithecus→ Homo habilis→ Homo erectus
C. Ramapithecus→ Homo habilis→ Austalopithecus→ Homo erectus
D. Austalopithecus→ Homo habilis→ Ramapithecus→ Homo erectus

169. Which of the following is the correct sequence of events in the origin of life?
I. Formation of protobionts
II. Synthesis of organic monomers.
III. Synthesis of organic polymers
IV. Formation of DNA-based genetic system.
A. I, II, III, IV B. I, III, II, IV

C. II, III, I, IV D. II, III, IV, I

170. A molecule that can act as a genetic material must fulfil the traits given below, except
A. it should be able to express itself in the form of 'Mendelian characters'
B. it should be able to generate its replica
C. it should be unstable structurally and chemically
D. it should provide the scope for slow changes that are required for evolution

171. DNA-dependent RNA polymerase catalyses transcription on one strand of the DNA which is called the
A. template strand B. coding strand
C. alpha strand D. anti strand

172. Interspecific hybridisation is the mating of
A. animals within same breed without having common ancestors
B. two different related species
C. superior males and females of different breeds
D. more closely related individuals within same breed for 4-6 generations

173. Which of the following is correct regarding AIDS causative agent HIV?
A. HIV is enveloped virus containing one molecule of single-stranded RNA and one molecule of reverse transcriptase
B. HIV is enveloped virus that contains two indentical molecules of single-stranded RNA and two molecules of reverse transcriptase
C. HIV is unenveloped retrovirus
D. HIV does not escape but attacks the acquired immune response.

174. Among the following edible fishes, which one is a marine fish having rich soure of omega-3 fatty acids?
A. Mystus B. Mangur
C. Mrigala D. Mackerel

175. Match column I with column II and select the correct option using the codes given below

Column I	Column II
I. Citric acid	1. Trichoderma
II. Cyclosporin	2. Clostridium
III. Statins	3. Aspergilus
IV. Butyric acid	4. Monascus

Codes

	I	II	III	IV
A.	3	1	2	4
B.	3	1	4	2
C.	1	4	2	3
D.	3	4	1	2

176. Biochemical oxygen Demand (BOD) may not be a good index for pollution in water bodies receiving effluents from
A. domestic sewage
B. daily industry
C. petroleum industry
D. sugar industry

177. The principle of competitive exclusion was stated by
A. C Darwin B. GF Gause
C. MacArthur D. Verhulst and Pearl

178. Which of the following National Parks is home to the famous musk deer or hangul?
A. Keibul Lamjao National Park, Manipur
B. Bandhavgarh National Park , Madhya Pradesh
C. Eaglenest Wildlife sanctuary, Arunachal Pradesh
D. Dachigam National Park, Jammu and Kashmir

179. A lake which is rich in organic waste may result in
A. increased population of aquatic organism due to minerals
B. drying of the lake due to algal bloom
C. increased population of fish due to lots of nutrients
D. mortality of fish due to lack of oxygen

180. The highest DDT concentration in aquatic food chain shall occur in
A. phytoplankton B. seagull
C. crab D. eel