Objective Part

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1. **The study of the distribution of animals in nature is called:**
   (a) Zoogeography (b) Biodiversity (c) Geography (d) Wild life

2. **Study of tissue is called: OR Study of fossils is called:** (2 Times)
   (a) Morphology (b) Anatomy (c) Histology (d) Microbiology

3. The study of parasite is called.
   (a) Paleontology (b) Histology (c) Microbiology (d) Parasitology

4. **A group of similar cells that perform similar functions is:** (3 Times)
   (a) Organ (b) Organelles (c) Tissue (d) System

5. **A large regional community primarily determined by climate is called as:** (6 Times)
   (a) Biome (b) Biosphere (c) Population (d) Community

6. **Population of different species living in the same Habitat from a:** (1 Times)
   (a) Biome (b) Biosphere (c) Population (d) Community

7. **The lowest percentage of bio-elements in man among the following is of:**
   (a) Chlorine (b) Manages (c) Sulphur (d) Iron

8. **The percentage of hydrogen present in the human body is:** (1 Times)
   (a) 20% (b) 15% (c) 10% (d) 5%

9. **Which one of these is Macro Molecule?**
   (a) H_2O (b) CO_2 (c) O_2 (d) Starch

10. **Which one serves to build macromolecules**
    (a) ATP (b) Starch (c) Glucose (d) Kertain

11. **The tentative explanation of observation:** (5 Times)
    (a) Hypothesis (b) Deduction
    (c) Law (d) Theory

12. **The reasoning that moves from general to specific is:** (1 Times)
    (a) Deductive (b) Inductive (c) Scientific (d) Theoretical

13. **The percentage of water in human bone cell is:** (1 Times)
    (a) 18% (b) 19% (c) 20% (d) 25%

14. **The most recent era is:** (1 Times)
    (a) Paleozoid (b) Cenozoic (c) Mesozoic (d) Protozoic

15. **The numbers of species of insects are:**
    (a) 22.5% (b) 17.6% (c) 15.5% (d) 53.1

16. **The deductive reasoning we move from:** (1 Times)
    (a) General to specific (b) Specific to general
    (c) General to general (d) Specific to specific

17. **The first ever clone was prepared in 1997 in:**
    (a) England (b) Ireland (c) Scotland (d) Maryland

18. **An aphid that attacks Walnut tree is being controlled biologically by:** (1 Times)
    (a) Wasp (b) House fly (c) Hone bee (d) Mosquito

19. **AIDS is caused by:**
    (a) Fungi (b) Bacteria (c) Virus (d) Algae

20. **In biological control an aphid is being controlled by:**
    (a) Honey bee (b) Wasp (c) Mosquito (d) Dragon fly

21. **The percentage of water in bacterial cell is about:** (2 Times)
    (a) 15% (b) 18% (c) 50% (d) 70%
    2.3: Importance of Water

22. **Human tissues have 85% water in cells of:** (2 Times)

(a) Brain (b) Bone (c) Blood (d) Liver

23. **The specific heat of vaporization of water is:** (2 Times)
(a) 457 kcal/kg (b) 574 kcal/kg (c) 547 kcal/kg (d) 475 kcal/kg

24. **The specific heat of vapirzation of water in kcal/kg:** (2 Times)
(a) 457 (b) 574 (c) 547 (d) 475

25. **The most abundant carbohydrates in nature is:** (3 Times)
(a) Starch (b) Cellulose (c) Glucose (d) Maltose

26. **Which one of following is not a polysaccharide?** (2 Times)
(a) Chitin (b) Cutin (c) Pectin (d) Dextrin

27. **The covalent bond between two monosaccharide's is called:** (3 Times)
(a) Peptide bond (b) Glycosidic bond
(c) Hydrogen bond (d) Ester bond

28. **Monosaccharide which are rare in nature and occur in some bacteria is:** (1 Times)
(a) Trioses (b) Tetroses (c) Pentoses (d) Hexoses

29. **Glycogen gives colour with iodine:**
(a) Black (b) Red (c) Blue (d) Green

30. **The melting point of palmatic aid is:** (1 Times)
(a) -8°C (b) 34°C (c) 63.1°C (d) 55.6°C

31. **The most abundant organic compound in mammalian cell:**
(a) Water (b) Proteins (c) Carbohydrates (d) Lipids

32. **Keratin is an example of Fibrous protein present in:** (2 Times)
(a) Nails and Hair (b) Blood
(c) Muscles (d) Bones

33. **Peptide bond is a:** (1 Times)
(a) C-N link (b) C-O link (c) N-H link (d) C-H link

34. **In the $\alpha - helix$ protein structure, each turn of the helix has amino acids.** (1 Times)
(a) 3.6 (b) 4.6 (c) 5.6 (d) 6.6

35. **Which of the following is not a fibrous protein:**
(a) Keratin (b) Myocin (c) Fibrin (d) Hormones

36. **The percentage of ribosomal RNA in the cell is:**
(a) 4% (b) 20% (c) 50% (d) 80%

37. **Hydrogen bonds between adenine and thymine are:**
(a) Three (b) Four (c) Five (d) Two

38. **The Ribosomal RNA (rRNA) is synthesized and stored in the:**
(a) Golgi Complex (b) Centriole
(c) Nucleolus (d) Vacoule

39. **Chemical nature of most cellular secretions is:** (2 Times)
(a) Proteins (b) Lipids (c) Glycoproteins (d) Carbohydrates

40. **If non-protein part is loosely attached to protein, it is known as:** (3 Times)
(a) Cofactor (b) Coenzyme (c) Holoenzyme (d) Active site

41. **The detachable cofactors of an enzyme is known as:** (1 Times)
(a) Activator (b) Prostheic group
(c) Coenzyme (d) Apo enzyme

42. **Metal ions are related to:**
(a) Coenzymes (b) Vitamins (c) Cofactors (d) Substrate

43. **If the non-protein part of enzyme is covalently bonded; it is called:** (4 Times)
(a) Co-factor (b) Activator (c) Co-enzyme (d) Prostheitc group

44. **An activated enzyme consisting of a polypeptide chain and a cofactor is called:** (4 Times)

(a) Apoenzyme **(b)** Holoenzyme (c) Coenzyme (d) Both A & B

45. **An enzyme with its co-enzume or prosthetic group removed is designated as:** (3 Times)

(a) Holoenzyme **(b)** Apoenzyme (c) Coenzyme (d) Activator

46. **The enzymes involved in cellular respiration are found in _____**

(a) Chloroplast (b) Ribosomes (c) Mitochondria **(d)** Gogibodies

47. **Lock and Key model was proposed by:** **(2 Times)**

(a) Koshland **(b)** Emil Fischer (c) Flemming (d) Watson

48. **According to lock and key model, the active site is:** **(3 Times)**

(a) Soft structure (b) Flexible Structure

(c) Attractive Structure **(d)** Rigid Structure

49. **Induced fit model was proposed by:** **(2 Times)**

(a) Emil Fischer **(b)** Koshland (c) Jenner (d) Pasteur

50. **Optimum ph for the proper functioning of enzyme sucrase is:** **(4 Times)**

(a) 2.00 **(b)** 4.50 (c) 5.50 (d) 7.60

51. **The optimum pH of salivary amylase is:** **(3 Times)**

(a) 2.80 (b) 4.80 **(c)** 6.80 (d) 8.80

52. **The optimum pH of enzyme pepsin is:** **(3 Times)**

(a) 2 (b) 6.8 (c) 7 (d) 9

53. **The enzyme with optimum pH=7.60 is:** **(1 Times)**

(a) Arginase (b) Enterokinase **(c)** Catalase (d) Sucrase

54. **The optimum temperature of human body enzyme is:** **(2 Times)**

(a) 27°C **(b)** 37°C (c) 47°C (d) 57°C+

55. **Optimum pH value for enzyme pepsin is:** **(1 Times)**

(a) 4.50 (b) 9.00 **(c)** 2.00 (d) 5.50

56. **The optimum pH of catalase is:** **(2 Times)**

(a) 6.60 **(b)** 7.60 (c) 8.60 (d) 9.60

57. **Optimum pH for action of pancreatic lipase is:**

(a) 3.00 (b) 5.00 (c) 7.00 **(d)** 9.00

58. **The competitive inhibitors of succnic acid is:** **(1 Times)**

(a) Furmaic acid **(b)** Malonic acid

(c) Citric acid (d) Acetic acid

59. **Poisons like cyanides, antibiotics and some drugs are examples of:** **(1 Times)**

(a) Enzymes (b) Co-enzymes **(c)** Inhibitors (d) Cofactors

60. **Reversible inhibitors form weak linkage with:**

(a) Substrate (b) Product **(c)** Enzyme (d) Reactant

61. **The resolution of naked eye is:** **(1 Times)**

(a) 1mm (b) 1um (c) 1nm (d) 1cm

62. **Resolution power of a typical compound microscope is:** **(1 Times)**

(a) 300X (b) $1.0\mu m$ (c) $2.0\mu m$ **(d)** 2-4 Angstron

63. **Resolution of human naked eye is:**

(a) 162 (b) 262 (c) 252 (d) 152

64. **Which is not found in primary wall?**

(a) Cellulose (b) Hemicellulose

(c) Lignin (d) Pectic

65. **The process of taking in liquid material by cell membrane is called:**

(a) Phagocytosis (b) Exocytosis

(c) Pinocytosis (d) Lymphocytosis

66. **The percentage lipids in plasma membrane is:**

(a) 60-80% (b) 30-60% **(c)** 20-40% (d) 10-20%

67. **Cell membrane is chemically composed of proteins:** **(1 Times)**

(a) 10-20% (b) 20-30% (c) 40-50% **(d)** 60-80%

68. **Cell wall is secreted by:** **(3 Times)**

(a) Protoplasm (b) Nucleoplasm

(c) Golgi Complex (d) Ribosome

69. **When cross-section of centriole is observed it shows as it consists of:**

(a) 9-microtubules (b) 3-microtubules

(c) 11- microtubules (d) 6- microtubules

70. **The soluble part of the cytoplasm is called:**

(a) Stroma (b) Gel **(c)** Cytosol (d) Matrix

71. **Cisternae are associated with:**

(a) ER (b) Mitochondria

(c) Nucleus (d) Chloroplast

72. **Harmful substances are detoxified in the liver cells by:**

(a) Mitochondria **(b)** Endoplamic

(c) Golgi Complex (d) Nucleolus

73. **A structure found attached to membranes in cell. It consists of 2 parts. Name it.**

(a) Golgi Apparatus (b) Mitochondria

(c) Lysosome **(d)** Ribosome

74. **A group of ribosome attached to mRNA is known as:** **(1 Times)**

(a) Lysosome (b) Peroxisome **(c)** Polysome (d) Glyoxisome

75. **The attachment of two sub fibrous protein in:** **(2 Times)**

(a) Ca^{+2} **(b)** Mg^{+2} (c) K^{+2} (d) Fe^{2+}

76. **Proteins are synthesized by:** **(4 Times)**

(a) Polysome (b) Nucelosome (c) Lysosome **(d)** Ribosome

77. **The factory of ribosome is the:** **(1 Times)**

(a) 30S (b) 50S (c) 70S **(d)** 80S

78. **Eukaryotic ribosomes are composed of almost equal amount of:**

(a) RNA and Protein (b) DNA and Protein

(c) RNa and Lipid (d) RNA and Carbohydrates

79. **Most of the cell secretions are in nature.**

(a) Proteins (b) Lipids (c) Carbohydrates **(d)** Glycoproteins

80. **Gogi apparatus is concerned with cell:** **(2 Times)**

(a) Division (b) Lysis **(c)** Secretion (d) Storage

81. **Tay-Sach's disease is because of absence of an enzyme. That is involved in catabolism of:** **(1 Times)**

(a) Polysaccharides (b) Oligosaccharides

(c) Proteins **(d)** Lipids

82. **Tay-Sach's disease results due to accumulation, in brains cells of:** **(1 Times)**

(a) Mg^{+2}Ions (b) Glucose (c) Proteins **(d)** Lipids

83. **De Duve discovered cell organelle:**

(a) Mitochondria **(b)** Lysosome (c) Plastids (d) Golgi Complex

84. **The diameter of peroxisome is approximately:**

(a) $0.2\mu m$ (b) $0.3\mu m$ (c) $0.4\mu m$ **(d)** $0.5\mu m$

85. **Glyoxosomes are most abundant in:**

(a) Human blood **(b)** Plant seedings (c) Liver cells (d) Microorganisms

86. **What is not true about microfilaments?**

(a) Actin (b) Amoeboid movement

(c) Cyclosis (d) Linked with outer surface of plasma membrane

87. **The protein present in microtubules is:** **(1 Times)**

(a) Actin (b) Tetroses (c) Tubulin (d) Tropomyosin

88. **Cyclosis and amoeboid movements are because of:**

(a) Microtubules (b) Microfilaments
(c) Intermediate filaments (d) None of these

89. **Infolding of inner membrane of mitochondria are called as:** **(2 Times)**

(a) Cisternae (b) Cristae (c) Granum (d) Thylakoid

90. **Cristae are found in:**

(a) Golgi complex (b) Chloroplast
(c) Endoplasmic reticulum (d) Mitochondria

91. **Which one of the following cellular organelles is called power house of the cell?**

(a) Chloroplast (b) Mitochondria
(c) Golgibodies (d) Lysosomes

92. **Chromoplast impart colours to the plants other than:**

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

93. **Stroma is a fluid in the chloroplast:**

(a) Thylakoids (b) Matrix (c) Granum (d) Intergranum

94. **Plastids are only found in:** **(1 Times)**

(a) Bacteria (b) Viruses (c) Plant Cell (d) Animal Cell

95. **The fluid that surrounds the Thylakoid is called:** **(2 Times)**

(a) Matrix (b) Stroma (c) Medium (d) Cytoplasm

96. **Robert Brown reported the presence of:**

(a) Lysosome (b) Ribosomes (c) Mitochondria (d) Nucleus

97. **Eukaryotes have pores per nucleus:**

(a) 3000 (b) 30,000 (c) 6 or 8 (d) 3 or 4

98. **The number of pores in nuclear membrane of erythrocyte is:**

(a) 03 or 04 (b) 02 or 03 (c) 05 or 06 (d) 30,000

99. **Organelle found in both prokaryotic and eukaryotic cells:**

(a) Ribosomes (b) Mitochondria (c) Chloroplasts (d) Lysosomes

100. **Closely related classes are grouped into:**

(a) Division (b) Order (c) Family (d) Kingdom

101. **Initially, the classification was based on:**

(a) Cytology (b) Physiology (c) Morphology (d) Genetic features

102. **Binomial nomenclature system was given by:**

(a) Pasteur (b) De Duve (c) Lamark (d) Linnaeus

103. **Binomial system of nomenclature was devised by:**

(a) E-Chatton (b) Ernst Hackle
(c) Robert Whittaker (d) Carlous Linnearus

104. **The common name for Solanum melangena is:** **(1 Times)**

(a) Potato (b) Tobacco (c) Onion (d) Tomato

105. **The smallest known viruses contain RNA in spherical capsid are the:** **(1 Times)**

(a) Polio Viruses (b) Pox Viruses
(c) Herpes Viruses (d) Influenza Viruses

106. **The common name of Allium cepa is:** **(1 Times)**

(a) Piyaz (b) Bathu (c) Channa (d) Potato

107. **Solanum tubersome is the scientific name of:**

(a) Onion (b) Tomato (c) Potato (d) Garlic

108. **Organelle of symbiotic origin is:** **(5 Times)**

(a) Cell Wall (b) Cell membrane
(c) Mitochondria (d) Vacoule

109. **In five kingdom system, Eukaryotic multicellular reduces are placed in kingdom:**
(a) Monera (b) Protista (c) Fungi (d) Animalia

110. **The number of capsomers in capsid of adenovirus are:** **(4 Times)**
(a) 152 (b) 252 (c) 352 (d) 452

111. **Madcow disease is caused by:** **(3 Times)**
(a) Bacteria (b) Fungus (c) Prions (d) Virion

112. **The number of capsomeres present in herpes virus capsid is:** **(2 Times)**
(a) 252 Capsomers (b) 162 Capsomers
(c) 250 Capsomers (d) 100 Capsomers

113. **The size of Parvovirus is:**
(a) 100 nm (b) 20 nm (c) 250 nm (d) 75 nm

114. **Capsomers are subunits which form capsid of a virion. These capsomeres are chemically.**
(a) Lipids (b) Nucelic acids
(c) Carbohydrate (d) Proteins

115. **Lytic cycle completion occurs about:**
(a) 15 min (b) 25 min (c) 35 min (d) 5 min

116. **Paramyxoviruses cause the disease:** **(1 Times)**
(a) Influenza (b) Polio
(c) Mumps & Measles (d) Herpes Simple

117. **Influenza viruses are:** **(2 Times)**
(a) DNA naked (b) DNA enveloped
(c) RNA enveloped (d) RNA naked

118. **A disease, which is highly contagious is:** **(1 Times)**
(a) Measles (b) Mumps (c) Influenza (d) Herpes

119. **Which o the following viral disease is caused by DNA virus?**
(a) Herpes simplex (b) Influenza
(c) Mumps (d) Polio

120. **Which one of the following viral disease is caused by RNA virus?**
(a) Small pox (b) Influenza (c) Poliomyelitis (d) Mumps

121. **HIV belongs to the group of viruses called:**
(a) Pox viruses (b) DNA viruses
(c) Retrovirus (d) Bacteriophage

122. **The single standard RNA-tumor viruses are:**
(a) Spherical (b) Elongated (c) Spiral (d) Cubical

123. **Hepatitis "B" is also called:**
(a) Delta Hepatitis (b) Infectious Hepatitis
(c) Infusion Hepatitis (d) Serum Hepatitis

124. **Hepatitis is an inflammation of:** **(1 Times)**
(a) Stomach (b) Pancreas (c) Liver (d) Kidney

125. **Hepatitis C is caused by virus:**
(a) DNA-non enveloped (b) DNA enveloped
(c) RNA non enveloped (d) RNA enveloped

126. **Germ theory of disease was formulated by:**
(a) Robert Koch (b) Louis Pasteur
(c) Edward (d) Christian Gram

127. **Cell Wall is absent in:** **(1 Times)**

(a) E. Coli **(b)** Mycoplasma (c) Vibrio (d) Spriochete

128. **Curved or comma shaped bacteria are called:**

(a) Vibrio (b) Spirillum (c) Spirochetes (d) Bacilli

129. **Oval shaped bacteria are:**

(a) Spirilla (b) Vibrio **(c)** Cocci (d) Bacilli

130. **A bacteria with single polar flagellum is called:**

(a) Atrichous **(b)** Monotrichous

(c) Lophorichous (d) Amphitrichous

131. **Pili are made up of special protein called:** **(2 Times)**

(a) Pillin (b) Flagellin (c) Tubulin (d) Myosin

132. **Bacteria without any flagella are called:** **(5 Times)**

(a) Flagellate **(b)** Atrichous (c) Tubulin (d) Myosin

133. **Rod shaped bacteria are called:**

(a) Cocci (b) Bacilli (c) Spirilla (d) Vibrio

134. **These are smallest and without cell wall:** **(2 Times)**

(a) Mycoplasma (b) Pseudomonas (c) Spirochete (d) E-Coli

135. **Cell wall of gram positive bacteria is stained:**

(a) Pink (b) Red (c) Green **(d)** Purple

136. **When flagella surround the whole cell of bacteria, it is termed as:**

(a) Atrichous (b) Lophotrichous

(c) Amphitrichous **(d)** Peritrichous

137. **In bacteria when the division is three planes it will produce which arrangement:**

(a) Streptococous (b) Tetrad

(c) Sarcina (d) Diplococcus

138. **Which is an aerobic bacterium?** **(5 Times)**

(a) E.Coli (b) Spirochete (c) Campylobacter **(d)** Pseudomonas

139. **Spirochete is a bacterium:**

(a) Aerobic **(b)** Anaerobic (c) Facultative (d) Microaerophilic

140. **Asexual reproduction in bacteria occurs by:**

(a) Conjugation (b) Transduction

(c) Transformation **(d)** Binary Fission

141. **Rapid phase of growth of Bacteria is:**

(a) Lag phase **(b)** Log phase

(c) Stationary phase (d) Decline phase

142. **Conjugation in bacteria is promoted by the structure:**

(a) Flagella **(b)** Pili (c) Cillia (d) Spores

143. **The thick walled reproductive cell of cyanobacteria are called:**

(a) Heterocyst (b) Trichome (c) Hormogonia (d) Akinete

144. **Reserved food material in cyanobacteria is in the form of:** **(7 Times)**

(a) Sucrose (b) Starch **(c)** Glycogen (d) Proteins

145. **All of the following are related to Nostoc except:**

(a) Trichome (b) Slimy covering

(c) Branched filaments (d) Heterocyst

146. **Which of the following is not present protists?**

(a) Flagella **(b)** Embryo (c) Cilia (d) None of these

147. **Trypanosoma is an example of:** **(2 Times)**

(a) Actinopods **(b)** Zooflagellates

(c) Apicomplexans (d) Ciliates

148. **Tests of for a minifera, are made up of:** **(5 Times)**

(a) Silica (b) Calcium (c) Chitin (d) Magnesium

149. **An outer flexible covering of ciliates is:** (2 Times)

(a) Cell wall (b) Pellicle (c) Sheath (d) Cuticle

150. **The protozoans having two kids of nuclei:** (1 Times)

(a) Amoeba (b) Zooflagellates
(c) Ciliates (d) Actinopods

151. **African sleeping sickness is transmitted by:** (9 Times)

(a) Tse-tse (b) Mosquito
(c) Trypanosoma (d) Trichonymphas

152. **The sexual process is exhibited by most cities by:** (1 Times)

(a) Binary fission (b) Budding
(c) Conjugation (d) Fertilization

153. **Sleeping sickness is spread by:** (1 Times)

(a) Tse-tse fly (b) Trypanosoma (c) Mosquito (d) Plasmodium

154. **Amoebas move and obtain food by means of:**

(a) Cilia (b) Flagella (c) Plasmodium (d) Psedopodia

155. **Entamoeba histolytical causes amoebic:** (1 Times)

(a) Cholera (b) Fever (c) Dysentery (d) Migraine

156. **Pelomyxapalustiris is commonly called:**

(a) Entamoeba (b) Trypanosoma
(c) Trichonympha (d) Giant amoeba

157. **Based on molecular data Euglenoids are thought to be closely related to:**

(a) Brown algae (b) Zooflagellates
(c) Green algae (d) Diatoms

158. **Algae having shells composed of two halves that fit together like petridish belongs to:** (1 Times)

(a) Diatoms (b) Foraminifera (c) Actinopoda (d) Slime molds

159. **Diatoms belong to phylum:** (1 Times)

(a) Rholophyta (b) Phaeophyta
(c) Chrysophyta (d) Pyrrophyta

160. **Ceratium belongs to group of algae called:** (1 Times)

(a) Diatoms (b) Red algae (c) Brown algae (d) Dinoflagellates

161. **Algae which take part in building coral reefts along with coral animals are:**

(a) Red algae (b) Brown algae (c) Green algae (d) Diatoms

162. **Cell wall of oomycotes contain mostly:**

(a) Chitin (b) Cellulose (c) Gylcan (d) Pectin

163. **Euglenoids are thought to be closely related to:**

(a) Zooflagellates (b) Dinoflagellates
(c) Diatoms (d) Brown algae

164. **Slime mold feeding state is:** (4 Times)

(a) Blasto sytle (b) Sporozoites
(c) GAstrozoid (d) Plasmodium

165. **Kepls, the largest known algae belong to group:**

(a) Brown (b) Red (c) Green (d) Euglenoid

166. **Example of soil dwelling carnivorous fungus is:** (2 Times)

(a) Arthrobotrys (b) Armilaria
(c) Pleurotus (d) Pencillium

167. **Most of the visible part of lichen is:** (2 Times)

(a) Fungi (b) Algae (c) Bacteria (d) Roots

168. **Which one is an example of foliose lichens:** **(1 Times)**
(a) Ramalina (b) Bacidia (c) Lecanora **(d)** Permelia

169. **In fungi spores are produced inside the reproductive structure called:**
(a) Conidia **(b)** Sporangia (c) Basidia (d) Ascocarps

170. **Sexual reproduction is absent in:** **(1 Times)**
(a) Deuteromycota (b) Zygomycota
(c) Ascomycota (d) Basidiomycota

171. **All fungal nuclei are haploid except for transient diploid.**
(a) Spores **(b)** Zygote (c) Conidia (d) Zygospores

172. **The most common fungi are:** **(1 Times)**
(a) Ustilago (b) Gymnosperms
(c) Mosses (d) Angiosperms

173. **The most common rust fungi are:** **(1 Times)**
(a) Ustilago **(b)** Puccinia (c) Penicillium (d) Yeast

174. **Yeasts are unicellular:**
(a) Protozoans (b) Algae **(c)** Fungi (d) Bacteria

175. **Loose smut of wheat is caused by the following fungi:** **(1 Times)**
(a) Puccinia (b) Penicillium (c) Aspergillus **(d)** Ustilago

176. **Colour of spores of smuts is:**
(a) Penicillium (b) Rhizopus (c) Pilobolus **(d)** Mushrooms

177. **Lovastain is used for lowering blood.** **(4 Times)**
(a) Pressure (b) Glucose **(c)** Cholesterol (d) Neraspora

178. **Reindeer moss used as food for reindeer is:**
(a) Moss **(b)** Lichen (c) Mold (d) Club fungi

179. **Poisonous mushrooms are called:** **(3 Times)**
(a) Truffles (b) Morels (c) Agaricus **(d)** Toadstools

180. **Lovastatin is fungal product which lowers blood:**
(a) Sugar **(b)** Cholesterol (c) Urea (d) Calcium

181. **Histoplasmosis is:** **(1 Times)**
(a) Heart disease (b) Kidney disease
(c) Lung disease (d) Skin disease

182. **Rust disease is caused by:**
(a) Puccinia (b) Ustilago (c) Rhizopus (d) Yeast

183. **Ustilago species are most common:**
(a) Rust fungi **(b)** Smut fungi (c) Mold (d) Yeast

184. **A haploid spermatozoid fuses with haploid egg to produce diploid:**
(a) Oospore (b) Ossphere (c) Spore (d) Gamete

185. **Loycopsida are commonly called:** **(1 Times)**
(a) Whisk fern (b) Horse tails **(c)** Club mosses (d) Hornworts

186. **Horsetail belongs to subdivision:**
(a) Lycopsida (b) Psilopsida **(c)** Sphenopsida (d) Pleropsida

187. **The plant of sphenopsida is also called as:**
(a) Angiosperms (b) Gymbosperms (c) Mosses **(d)** Arthrophytes

188. **Vascular plants belonging to subdivision sphenopsida are commonly called:**
(a) Whisk ferns (b) Club mosses **(c)** Horsetails (d) Ferns

189. **The rhizome in adiantum is protect by:**
(a) Ramenta **(b)** Fronds (c) Stipe (d) Stomium

190. **Small leaves having a single undivided vein are called:**
(a) Microphylls (b) Megaphylls (c) Neutrophylls (d) Heterophylls

191. **Which of the following were the first plants that formed true leaves and roots?** **(2 Times)**
(a) Microphylls (b) Megaphylls (c) Neutrophylls (d) Ferns

192. **Technically are seed may be defined as a fertilized:**
(a) Egg (b) Oospore **(c)** Ovule (d) Both A & C

193. **All seed producing plants are called:** **(1 Times)**
(a) Bryophytes (b) Pteridophyte (c)Tracheophytes **(d)** Spermatophytes

194. **In Spermatophytes, seed is formed from:**
(a) Ovule (b) Ovary (c) Anther (d) Embryosac

195. **Among gymnosperms taxus plant is commonly called as:**
(a) Sago palm (b) pine (c) deodar **(d)** yew

196. **Which of the following is modified leaf?** **(1 Times)**
(a) Tendril (b) Thorn **(c)** Flower (d) Both Band C

197. **Female gametophyte in flowering plants is:**
(a) Ovary (b) Archegonium **(c)** Seed (d) Embryo Sac

198. **Apple and pear belongs to plant family:**
(a) Solanaceae (b) Fabaceae (c) Pocaeae **(d)** Rosaceae

199. **Pulse producing plants are belonging to the family:** **(1 Times)**
(a) Rosaceae (b) Solanaceae **(c)** Fabaceae (d) Poaceae

200. **The common name of Solanum melangena:**
(a) Onion **(b)** Brinjal (c) Potato (d) Amaltas

201. **The integumentary and nervous system are developed from:**
(a) Endoderm (b) Mesoderm **(c)** Ectocerm (d) Mesoglea

202. **Pseudocoelom is present in:**
(a) Cnidaria (b) Flat worm **(c)** Round worms (d) Earth worms

203. **Pseudocoelom is characteristics feature of:** **(1 Times)**
(a) Aschelaminthes (Nematoda) (b) Annelida
(c) Mollusca (d) Porifera

204. **Portuguese man of war is the name used for:**
(a) Physalia (b) Obelia (c) Hydra (d) Aurelia

205. **In mollusca, a blue respiratory pigment is present called:** **(1 Times)**
(a) Haemoglobin (b) Haemoerythrin
(c) Prothombin **(d)** Haemocyanin

206. **An example of beautiful and delicate sponge called Venus flower basket is:** (1 Times)
(a) Sycon (b) Leucoselenia **(c)** Euplectella (d) Spngilla

207. **The pores by which the water leaves the body of sponges are called:** **(1 Times)**
(a) Ostia (b) Mouth (c) Anus **(d)** Osculum

208. **The pores by which water enters in the body of sponge is called:** **(1 Times)**
(a) Osculum **(b)** Ostia (c) Mouth (d) Spongocoel

209. **Polymorphism is a characteristic of members of phylum:** **(5 Times)**
(a) Porifera **(b)** Cnidaria (c) Annelida (d) Arthotropoda

210. **Sea Urchin belongs to phylum:** **(2 Times)**
(a) Coelantrata (b) Porifera (c) Nematoda (d) Arthropoda

211. **In phylum coelenterate special cells cnidocytes give size to:**
(a) NaCO **(b)** $CaCO_3$ (c) NaOH (d) $Ca(OH)_2$

212. **The polyp is reduced and medusa is dominant in:**
(a) Actinia (b) Madreporite **(c)** Aurelia (d) Oblelia

213. **The member of coelenterate commonly called Portuguese man of war is_** (2 Times)
(a) Nephron (b) Nephridia **(c)** Flame cells (d) Ganglia

214. **Flame cells are excretory cells in:** (2 Times)
(a) Flatworms (b) Segmented worms
(c) Round worms (d) Anseets

215. **Dugesia is a free-living flatworm with a ciliate outer surface. It is commonly known as:** (2 Times)
(a) Tape worm (b) Liver flake (c) Blood fluke (d) Planaria

216. **Common name for Ancyclostoma duodenal is:** (2 Times)
(a) Pin worm (b) Tape worm (c) Earth worm (d) Hook worm

217. **The body cavity of Nematoda is:** (2 Times)
(a) Blastocoel (b) Pseudocoelom (c) Coelom (d) Haemocoelom

218. **A free swimming trochophore larva is produced during the life cycle of:**
(a) Coelenterate (b) Ponifera (c) Annelida (d) Arhropods

219. **Neries belongs to class:** (1 Times)
(a) Sponges (b) Annelids (c) Nephron (d) Malpighian tubule

220. **Metamerically Segmented animals are belonging to the:** (3 Times)
(a) Annelids (b) Cnidarians (c) Molluscus (d) Echinoderms

221. **Aquatic Arthropods respire through:** (1 Times)
(a) Lungs (b) Skin (c) Gills (d) Spiracles

222. **Excretory system in artrhopods is composed of:** (2 Times)
(a) Kidney (b) Nephridia (c) Flame cells (d) Malpighian tubules

223. **Loligo is an animal of phylum mollusca which is commonly called:** (1 Times)
(a) Slug (b) Garden snail (c) Oyster (d) Squid

224. **In mollusks, a respiratory pigment of blue colour is present called:** (1 Times)
(a) Haemoglobin (b) Haemoerydhin
(c) Haemocyanin (d) None of these

225. **Garden snails belongs to class:** (1 Times)
(a) Gastropoda (b) Cephalopoda
(c) Pelecypoda (d) Drthropoda

226. **The larva found in echinoderms is:** (2 Times)
(a) Trochophore (b) Veliger
(c) Bipinnaria (d) Planaria

227. **Animals of which phylum have developed bilateral system in their larvae and radial:** (1 Times)
(a) Nematoda (b) Annelida (c) Mollusca (d) Echinodermata

228. **The presence of notochord is the character of:**
(a) Arhtropoda (b) Mollusea (c) Nematoda (d) Chordata

229. **The largest invertebrates is:**
(a) Earth worm (b) Star fish (c) giant squid (d) Ascarus

230. **Examples of tunicate is:**
(a) Amphioxus (b) Molgula (c) Amphibia (d) Reptilia

231. **Ancient fish that have developed lungs are called:**
(a) Dipnoi (b) Asterias (c) Thaliacea (d) Leptocardii

232. **Voice organs of birds:** (6 Times)
(a) Larynx (b) Pharnyx (c) Syrinx (d) Vocal cords

233. **Syrinx is an organ of voice in:** (1 Times)
(a) Amphibians (b) Birds (c) Reptiles (d) Mammals

234. **The sub class that has not primitive mammals is:**
(a) portotheria (b) Methatheria (c) Eutheria (d) None of these

235. **Mammals become dominant in:** (2 Times)

(a) Paleozoic period (b) Mesozoic period
(c) Coenozoic period (d) Proterozoic period

236. **Kangaroo belongs to sub class:** (2 Times)
(a) Metahteria (b) Prototheria (c) Eutheria (d) Reptilia

237. **Dolphin is:**
(a) Fish (b) Bird (c) Mammal (d) Amphibian

238. **Quantitative study of energy relationship in biological system is called:** (4 Times)
(a) Bioenergetics (b) Biosynthesis
(c) Biodegradation (d) Biotechnology

239. **Oxygen released during photosynthesis comes from:**
(a) Water (b) Carbon Dioxide
(c) Nitrates (d) Glucose

240. **A kind of chemical link between anabolism and catabolism.** (2 Times)
(a) Protein (b) Glucose (c) ATP (d) None of these

241. **Van Niel hyposynthesis carried out by terrestrial plants is about:**
(a) 10 (b) 20 (c) 30 (d) 40

242. **Van Niel hypothesized that source of oxygen during photosynthesis is:**
(a) Water (b) Carbon Dioxide
(c) Chlorophyll (d) NADP

243. **The air space in leaf may comprise up to _____ of the total volume of a leaf:**
(a) 80% (b) 60% (c) 40% (d) 20

244. **One of the accessory photosynthetic pigments carotenes are mostly:** (1 Times)
(a) Red to Orange (b) Yellow to Orange
(c) Green to Yellow (d) Orange to Red

245. **One of the following is not an accessory pigment:**
(a) Chlorophyll "a" (b) Carotenes
(c) Xanthophyll (d) Chlorophyll "b"

246. **Molecular formula for chlorophyll "b" is:** (4 Times)
(a) $C_{55}H_{72}O_5N_4Mg$ (b) $C_{55}H_{70}O_6N_4Mg$
(c) $C_{55}H_{70}O_5N_4Mg$ (d) $C_{55}H_{70}O_6N_6Mg$

247. **Chlorophylls are insoluble in:**
(a) Alcohol (b) Acetone
(c) Water (d) Carbon Tetrachloride

248. **Magnesium of chlorophyll is replaced in hemoglobin by:** (2 Times)
(a) Calcium (b) Potassium (c) Iron (d) Phosphorus

249. **The carotenes are mostly red to:**
(a) Blue (b) Yellow (c) Orange (d) Green

250. **Carbon Dioxide enters the leaves through:** (1 Times)
(a) Epidermis (b) Cuticle (c) Airspace (d) Stomata

251. **Photosystem II has the form of chlorophyll a which absorb best light of:**
(a) 670 nm (b) 680 nm (c) 690 nm (d) 700 nm

252. **The light falling on leaf surface is absorbed about:**
(a) 1% (b) 25% (c) 50% (d) 100%

253. **Chlorophyll 'a' of photosystem I absorbs maximum light of:** (1 Times)
(a) Low CO_2 (b) Low O_2 (c) Low ATP (d) Low NADPH

254. **The dark reaction occurs in:** (7 Times)
(a) Ctyoplasm (b) Chloroplast (c) Stroma (d) Grana

255. **In the citric acid, cycle acetyle-COA reacts with oxaloacetates of from:** (5 Times)
(a) Pyruvate (b) Citrate (c) NADH (d) ATP

256. **The breaking of terminal phosphate of ATP release energy of about:** **(3 Times)**
(a) 4.5 Kcal (b) 6.5 Kcal (c) 3.7 Kcal **(d)** 7.3 Kcal

257. **The amount of glucose into ATP during anaerobic respiration is:**
(a) 1% **(b)** 2% (c) 3% (d) 4%

258. **The final product of glycolysis by is:** **(1 Times)**
(a) Citrate **(b)** Pyruvate (c) Molate (d) Fumarate

259. **Pyruvic acid is the end product of:** **(4 Times)**
(a) Glycolysis (b) Krebs Cycle (c) ETC Cycle (d) Calvin Cycle

260. **From one pyruvate passing through Krebs cycle how many FADH2, molecules are formed?** **(1 Times)**
(a) 01 (b) 02 (c) 03 (d) 04

261. **The first step of krebs cycle is union of acetyl Co-A with oxaloacetate to form:**
(a) Isocitrate (b) α-ketoglutrate **(c)** Citrate (d) Malate

262. **In respiratory chain NADH is oxidized by:** **(3 Times)**
(a) Cytochrome-b (b) Oxygen
(c) Coenzyme-Q (d) H_2O

263. **Magnesium is an important nutrient ion in green plant as it is an essential component of:**
(a) Cell sap (b) Protein **(c)** Chlorophyll (d) Glucose

264. **Carnivorous plants live in soils that are deficient in:**
(a) Potassium (b) Oxygen **(c)** Nitrogen (d) Magnesium

265. **Certain types of whales are also:** **(1 Times)**
(a) Detritivore (b) Fluid feeders
(c) Omnivores **(d)** Filter feeders

266. **In Cockroach the partially digested food is stored in:** **(1 Times)**
(a) Rectum (b) Gizzard **(c)** Crop (d) Colon

267. **The partly digested food in cockroach is temporarily stored in:**
(a) Crop (b) Gizzard **(c)** Rectum (d) Stomach

268. **Tentacles is a characteristics of:** **(1 Times)**
(a) Hydra (b) Snail (c) Amoeba (d) Euglena

269. **Taste buds of tongue play important role in food:**
(a) Digestion **(b)** Selection (c) Lubrication (d) Mastication

270. **Pepsin is secreted by:** **(1 Times)**
(a) Mucous cell **(b)** Zymogen cell
(c) Parietal cell (d) Oxyntic cell

271. **Muscles of stomach are of which type:**
(a) Skeletal (b) Smooth **(c)** Cardiac (d) Voluntary

272. **The carbohydrate digesting enzyme in parcreatic juice is:** **(1 Times)**
(a) Lipase **(b)** Amylase (c) Erypsin (d) Trypsin

273. **Dipeptides are broken down into amino acids by:**
(a) Erypsin (b) Pepsin (c) Trypsin (d) Lipase

274. **Hepatic and pancreatic secretions in man are stimulated by:** **(1 Time)**
(a) Gastrin **(b)** Secretin (c) ADH (d) Adrenaline

275. **The length of Duodenum of human is about:** **(1 Time)**
(a) 15-20cm **(b)** 20-25cm (c) 30-35cm (d) 10-15cm

276. **If bile pigments are accumulated in blood condition is known as:**
(a) Gall stone (b) Jaundice **(c)** Pyrosis (d) Heart Pang

277. **Emulsification is the function of:**
(a) Bile (b) Lipase (c) Amylase (d) Protease

278. **Excess gastric secretion is an important factor for:** (1 Times)
(a) Water (b) Food (c) Blood (d) Oxygen

279. **Water is more viscous than air:**
(a) 10 Times (b) 20 Times (c) 50 Times (d) 100 Times

280. **During photorespiration, glycine is converted into serine in the:** (4 Times)
(a) Mitochondria (b) Ribosome
(c) Golgi Bodies (d) Chloroplast

281. **Spiracles are found in:** (1 Times)
(a) Fish (b) Cockroach (c) Leech (d) Earthworm

282. **Number of spiracles in Cockroach is:** (2 Times)
(a) 10 (b) 10 Pairs (c) 08 Pairs (d) 06 Pairs

283. **Lungs of birds have thin walled ducts called:** (1 Times)
(a) Alveoli (b) Trachea (c) Bronchi (d) Parabronchi

284. **Parabronchi are present only in the lungs:** (2 Times)
(a) Man (b) Frog (c) Cat (d) Birds

285. **Blood is not involved in transport of gases in:** (2 Times)
(a) Frog (b) Cockroach (c) Earthworm (d) Man

286. **Pleura is double layered thin membrane that covers:**
(a) Heart (b) Liver (c) Lungs (d) Kidneys

287. **Which one is the structure of respiratory system of man?**
(a) Esophagus (b) Larynx (c) Syrnix (d) Duodenum

288. **Lungs are covered by double layered thin membraneous Sacs called:**
(a) Pleura (b) Air sacs (c) Larynx (d) Diaphragm

289. **Which help in voice production when vibrated by air?**
(a) Spinal cord (b) Vocal Cord (c) Trachea (d) Bronchi

290. **Why hemoglobin is 98% saturated, the oxygen content per 100ml of blood is:**
(a) 19.6ml (b) 18.6ml (c) 17.6ml (d) 16.6ml

291. **Emphysema is a disease caused by the breakdown of:**
(a) Lungs (b) Trachea (c) Bronchi (d) Alveoli

292. **Asthma is associated with sever paroxym of difficult:** (1 Times)
(a) Sleeping (b) Speaking (c) Walking (d) Breathing

293. **How many molecules of oxygen can bind with a molecule of myoglobin**
(a) 04 (b) 03 (c) 02 (d) 01

294. **The volume of air taken inside the lungs and expelled during exercise is about:** (3 Times)
(a) 2.5 Liters (b) 3.5 Liters (c) 1.5 Liters (d) 4.5 Liters

295. **Total inside capacity of Lungs is about:**
(a) 1.5L (b) 3.5L (c) 4L (d) 5L

296. **Casparian strips are present in the cells of root.** (11 Times)
(a) Endodermis (b) Epidermis (c) Cortex (d) Pith

297. **The maximum depth of roots of Prosopis is:**
(a) 40m (b) 50m (c) 60m (d) 70m

298. **The dew drops on the tip of the grass leaves involves the phenomenon:**
(a) Imbibition (b) Bleeding (c) Gutation (d) Transpiration pull

299. **The loss of water through Hydathods in leaves is called:** (6 Times)
(a) Transpiration (b) Bleeding
(c) Guttation (d) Imbibitions

300. **The volume of dry seed may increase up to 200 times after absorbing water by:** (2 Times)

(a) Diffusion **(b)** Imbibitions (c) Osmosis (d) Guttation

301. **The structures involved in guttation are:** **(1 Times)**

(a) Lenticels **(b)** Hydathodes (c) Stomata (d) Cuticle

302. **Cuticular transpiration takes places at:** **(1 Times)**

(a) Morning (b) Noon (c) Evening **(d)** Night

303. **The ions involved in the opening and closing of stomata are:** **(2 Times)**

(a) Sodium (b) Calcium **(c)** Potassium (d) Magnesium

304. **Transpiration takes place through cuticle is about:** **(2 Times)**

(a) 5-7% (b) 6-7% (c) 5-6% (d) 2-5%

305. **The pressure flow theory was first proposed in 1930 by:** **(1 Times)**

(a) Ernst Hackel **(b)** Ernst Munch (c) Hemming (d) Dixon

306. **Open circulatory system is present in:**

(a) Man **(b)** Cockroach (c) Earthworm (d) Leach

307. **Single Circuit heart is found in:** **(9 Times)**

(a) Birds **(b)** Fishes (c) Reptiles (d) Mammals

308. **The left systemic arch disappears in:**

(a) Mammals (b) Fish (c) Reptiles **(d)** Birds

309. **The plasma proteins constitute percent by weight of plasma:** **(4 Times)**

(a) 7-9% (b) 9-11% (c) 11-13% (d) 13-15%

310. **Normal pH of human blood is:** **(7 Times)**

(a) 4.4 (b) 5.4 (c) 6.4 **(d)** 7.4

311. **Platelets are fragments of large cells called:** **(2 Times)**

(a) Microkaryocytes (b) Erythrocytes

(c) Megakaryocytes (d) Leucocytes

312. **In the embryoni8c life red blood cells are formed in the:** **(2 Times)**

(a) Bone marrow and vertebrae **(b)** Liver and spleen

(c) Heart and bone marrow (d) Sternum and Ribs

313. **A substance that inhibits blood clotting is:** **(5 Times)**

(a) Heparin (b) Fibrinogen (c) Fibrin (d) Thrombin

314. **Antiserum is a serum containing:** **(1 Times)**

(a) Hormones (b) Antigen (c) Enzyme **(d)** Antibodies

315. **The uncontrolled production of white blood cells result in:** **(1 Times)**

(a) Leucaemia (b) Thalassaemia

(c) Oedema (d) Asthma

316. **The renal vein brings the impure blood form:**

(a) Brain **(b)** Kidney (c) Lungs (d) Liver

317. **One complete heart beat consist of one systole and one diastole, and last for about:** **(4 Times)**

(a) 0.2 sec (b) 2 sec **(c)** 0.8 sec (d) 1.0 sec

318. **The valves present in the veins are:** **(2 Times)**

(a) Bicuspid (b) Tricuspid **(c)** Semi lunar (d) Aortic

319. **Discharge of Blood from Blood vessel is called as:** **(4 Times)**

(a) Stroke (b) Heart attack

(c) Thrombosis **(d)** Hemorrhage

320. **A condition of high blood pressure is known as:**

(a) Hypertension (b) Hemorrhage

(c) Hypotension (d) Arteriosclerosis

321. **Which is found in herestitial fluid?**

(a) Large Proteins **(b)** White Blood Cells

(c) Red Blood Cells (d) Platelets

Subjective Part

SECTION-I

Short Questions

1. What is Biochemistry? Give its importance.
2. Define Metabolism and name its two processes.
3. What is heat capacity of water? Give its importance.
4. Define heat of vaporization? Give the heat o vaporization of water.
5. Differentiate between amylase and amylopectin starches?
6. Differentiate between glycosidic and peptide bond.
7. Sketch Ribofuranose and Glucopyranose.
8. What are oligosaccharides?
9. What are lipids? Give to roles of waxes.
10. Differentiate between saturated and unsaturated fatty acid.
11. Draw structural formula of glycylalnine.
12. Give genereal formula for an Amino Acid.
13. Differentiate between Nucleoside and Nucleotide.
14. Write down two differences DNA and RNA.
15. What are conjugated molecules?
16. What are enzymes and coenzymes?
17. Give role and examples of enzymes activator.
18. Differentiate between Co-factor and Co-enzyme.
19. Define apoenzyme.
20. Give differences between prosthetic group and activator.
21. How is Prosthetic group different from Co-Enzyme?
22. Give any two characteristics of enzymes.
23. What is active site of an enzyme?
24. Define Koshland model of enzyme action.
25. Define lock and key model of enzyme.
26. Discuss enzyme concentration in affecting rate of enzyme action.
27. Write the effect of temperature on the enzyme action.
28. How pH affects the rate of enzyme action?
29. What is meant by inhibitors of enzyme? Give two examples.
30. Differentiate between reversible and irreversible enzyme inhibitors.
31. What are competitive and non-competitive enzyme inhibitors?
32. What is nuclear mitosis?
33. State role of fungi and Algae in Lichen for each other.
34. What is mycorrhiza?
35. Define endomycorrhizae and ecomycorrhizae.
36. Differentiate b/w karyogamy and plassmogamy.
37. What are dikaryotic hypae?
38. How Budding differ from fragmentation?
39. How spore are differ from conidia?
40. What are smuts?

41. Whatis parasexuality in fungi?
42. Give the ecological importance of lichens.
43. What is histoplasmosis? Give its causes.
44. What is ergotism? How is it caused?
45. Differentiate between radial and bilateral symmetry.
46. Differentiate between diploblastic and triploblastic animals.
47. Differentiate b/w schizocoelous and enterocoleous coelom.
48. Differentiate b/w protostomes and Deuterostome with two points.
49. Differentiate b/w coelomates and acoelomates.
50. How Acoelomates differ from pseudocoelomates?
51. What are diploblastic animals?
52. What is mesoglea and spongocoel?
53. Write down the importances of sponges.
54. How ostia differ from osculum?
55. What is polymorphism?
56. Differentiate b/w polyps and medusa.
57. What are coral reefs?
58. What is hermaphrodite animals? Give an examples.
59. Write any two parasitic adaptation is flat worms.
60. What do you mean by infestation and disinfestations?
61. Give beneficial effects of insects.
62. Name two harmful insects.
63. Write down affinities of echinoderms with hemichordates.
64. Give any two basic characteristics of Cordata.
65. Give two commercial importance of sharks.
66. Give the role of swim bladder in bony fishes.
67. Write down any four characteristics of class osteichytes (Bony fish)
68. What is Syrinx? Give function.
69. Give reptilian characteristics of Archaeopteryx.
70. Write any three characteristics of mammalian.
71. What are prototheria? Give two examples.
72. Write down the features of subclass Metatheria.
73. Give two characters of subclass eutheria.
74. Define bioenergetics.
75. Give any two difference between photosynthesis and respiration.
76. Define photosynthesis. Give its summary equation.
77. What is compensation point?
78. How chlorophyll “a” differs with chlorophyll “b”?
79. What are accessory pigments in plants? Give their functions.
80. Define absorption spectrum.
81. How action spectra can be obtained?
82. Give differences between antenna complex and reaction centre.
83. What is Z-scheme?
84. What are photosystems? Give their types.
85. Differentiate between photolysis and photophosphorylation.
86. Define Chemiosmosis.
87. What are Aerobic and Anaerobic respiration?
88. Define Glycolysis.

89. What is biological oxidation?

Section - II

Short Questions

90. Define microbiology and biotechnology.
91. Differentiate between Fresh water Biology and Marine Biology.
92. How much Micromolecules differ from Macromolecule?
93. What is population? Give its four attributes.
94. Differentiate between population and community.
95. Define the term biome with example.
96. Define Biodiversity? Give its percentage of different groups of organisms discovered so for.
97. Define phyletic lineage and biodiversity.
98. Define deductive reasoning and inductive reasoning:
99. Define theory. Give important features of a good theory.
100. Write names of four Eras of Geological time chart.
101. What is hydroponic culture technique?
102. What is "integrated disease management"?
103. Differentiate between chemotherapy and radiotherapy.
104. Compare radiotherapy and gene therapy to control disease.
105. Differentiate between gene therapy and chemotherapy.
106. What is Biological Control? Give its examples.
107. Differentiate between biopesticides and biological control.
108. Define Bioremediation and endangered species.
109. Write down salient features of cell theory.
110. Define fluid mosaid model of the cell membrane.
111. Define cell wall also give chemical composition of primary and secondary cell wall.
112. What is cytosol?
113. Give three functions of smooth endoplasmic reticulum (SER).
114. How cristae is different from cisternae?
115. Differentiate between phagocytosis and pinocytosis.
116. Define polysome and ribosomes.
117. Write down the two functions of Golgi complex.
118. Define storage diseases. Give at least their two examples.
119. Differentiate between microtubules and microfilaments?
120. How microtubules differ from microfilaments?
121. Give any two important functions of centrioles.
122. Differentiate the particles from cristae.
123. What are chromoplasts? Give their functions.
124. What is stroma? Give its function.
125. What are Thylakoid and Granum?
126. What are chromosomes? Why they are important?
127. Write two distinguishing characters of kingdom protista.
128. Characteristics Giant Amoeba.
129. Name a parasitic amoeba. What disease does it cause?
130. Write the two characteristics of zooflagellates.
131. What are choanoflagellates?

132. Write don two characteristics of ciliates.
133. What is the function of pellicle in ciliates?
134. Name the nuclei of ciliates.
135. Write any two characteristics of foraminifera?
136. How are foraminiferans source of line stone?
137. Write down two characteristics of apicomplexans.
138. Define term thallus.
139. How algae differ from plants.
140. Write a note on Euglenoids.
141. Write any two characteristics of Dinoflagellates.
142. What are red tides?
143. Write any three characteristics of diatoms.
144. What are kelps? Name the parts of thaullus of a kelp?
145. Green algae are considered ancestral organism of green land plants, why?
146. What are importance of any two algae?
147. Write down similarities and differences between fungi and fungus like protista.
148. Why Physarum Polycephalum is a model organism for research?
149. Give two characters of water molds.
150. What was the reason for migration out of Ireland?
151. Differentiate between organismic and cellular respiration.
152. In what way air is a better respiratory medium than water?
153. Define photorespiration? Name organelles involved in it:
154. Define respiratory surface. Give their properties.
155. What are parabronchi?
156. What is difference between glottis and epiglottis?
157. What is vocal cord? Give its function.
158. Differentiate between bronchi and bronchioles.
159. Differentiate between diaphragm and pleura.
160. What is respiratory distress syndrome?
161. Give percentage of CO_2 in venous and arterial blood.
162. How does carbon Dioxide concentration affect the oxygen carrying capacity of blood Hemoglobin?
163. How pH affects the capacity of hemoglobin to combine with oxygen?
164. Name some respiratory disorders and explain one.
165. What is asthma? Give its two causes.
166. What are the Symptoms of Emphysema?
167. How hemoglobin differ from myoglobin?
168. What is diving reflex?
169. Differentiate between diffusion and osmosis.
170. Describe briefly the symplast pathway.
171. Define water potential.
172. Define Guttation? What factors affect it?
173. What is Bleeding? Name the factors responsible for bleeding.
174. What are Lenticels? Give their function.
175. Define transpiration? Which is the most common type of transpiration.
176. Write a note on single circuit heart.
177. Differentiate between single and double circuit and double circuit heart with example.
178. Differentiate between pulmonary and systemic circulation.

179. What are platelets? Give their role.
180. What are blue babies?
181. Discuss Hypertension.
182. What is brain hemorrhage? Give its two preventative measures.
183. Differentiate between thrombus and embolus.
184. Write are lymph nodes? What is their function?
185. Define immunity and give two types.
186. Define Active and Passive Immunity.
187. Differentiate between natural active immunity and artificial active immunity.

Section - III

Short Questions

188. Give biological classification of corn.
189. What is binomial nomenclature? What are two rules of nomenclature?
190. Why euglena is difficult to classify?
191. Viruses are intracellular obligate parasites. Comment.
192. Differentiate between the capsid and caspomere.
193. What are prions?
194. What are capsomeres and what is their number in adenovirus?
195. How virion differs from prion?
196. Differentiate between lytic and lysogenic phage.
197. What are the symptoms of AIDS?
198. What are mumps and measlers?
199. What are Retrovirus and Paramyxoviruses?
200. What is Hepatitis? How is it caused?
201. Write down symptoms and preventions of hepatitis.
202. Describe four postulates of germ theory.
203. What do you know about huge bacterium?
204. What are pili? Give their functions?
205. What is plasmid?
206. What are mesosomes? Write their role.
207. Name the bacteria, which are photosynthetic?
208. Differentiate between lag and log phase.
209. How respiration occurs in bacteria?
210. What is ecological importance of bacteria?
211. Differentiate between microbioidal and microbistatic chemicals.
212. Differentiate between antibiotics and antiseptics with examples.
213. Discuss the role of Edward Jennar in Vaccination method of treatment.
214. Write a few lines on misuse of antibiotics.
215. What are trichomes? Give the structure and function of Heterocysts.
216. What is phylogenetic system of classification?
217. Write down any four characters of bryophytes.
218. What are amphibious plants of the world?
219. Differentiate between antheridiophores and archegoniophores.
220. How spores of mosses differ from spores of liver wort?
221. Define Paraphyses.

222. What is alternation of generation? Give its significance.
223. Why the plants belonging to group sphenopsida are called as arthophytes?
224. Define the term Circinate Vernation.
225. Give common name of adiantum.
226. Name the two living and extinct representative of Psilopsida.
227. Differentiate between microphylls and megaphylls.
228. What is overtopping?
229. Differentiate between homospory and heterospory.
230. Define Seed and Ovule.
231. What are gymnospermae? Give examples.
232. Differentiate between male and female cones of pinus.
233. How does gymnosperm differ from angiosperms? Give two points only.
234. What are essential and non-essential parts of flower?
235. Define double fertilization. In which plants, it occurs?
236. Differentiate beteen dicots and monocots.
237. What is chlorosis and what is their cause?
238. What are insectivorous plants? How they get their carbohydrates?
239. What is meant by symbiotic nutrition?
240. Differentiate between saprophatic and Parasitic mode of nutrition.
241. What are leguminous plants?
242. What is detritus feeding? Give examples.
243. What are filter feeders? Give their two examples.
244. What are Macrophagous feeding? Give one example.
245. Differentiate between facultative and obligate parasite.
246. Define digestion and egestion.
247. Define sac like digestive system and tube like digestive system regarding their efficiency.
248. Differentiate between Herbivores and Carnivores.
249. Differentiate between absorption and assimilation.
250. Name the ingredients of saliva.
251. Write only two functions of oral cavity.
252. What is heart burn or pyrosis?
253. Differentiate between chime and bolus.
254. Name different cells with their secretions which produce gastric juice.
255. Give names of hormones secreted by digestive systems.
256. How the gall stones are formed?
257. Write the composition of pancreatic juice.
258. Compare diarrhea and constipation.
259. What is Dyspepsia? Give its two symptoms.
260. How adipose tissue is formed?

Long Questions

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Long Question No. 5

1.	Differentiate between deductive and inductive reasoning with examples.
2.	Explain the biological method for solving a biological problem.
3.	How study of Biology helped mankind to improve production of food.
4.	Define cloning discuss its types and the commercial importance of the technique.
5.	What is the role of study of Biology in the welfare of mankind in the field of protection and conservation of environment?
6.	Describe the role of drug treatment and gene therapy in disease control.
7.	List the air passage way in the sequence from nostrils to alveoli. Describe the structure of alveolus in detail.
8.	Explain inspiration and expiration in man.
9.	In what ways air is better respiratory medium than water?
10.	In what ways, respiration is birds the most efficient and elaborate?

Long Question No. 6

1.	Why carbon occupies the central position in the skeleton?
2.	Describe the importance of water of life.
3.	What are polysaccharides? Describe its two different types.
4.	Describe acylglycerols in detail.
5.	Write a note on primary structure of protein.
6.	What functions are performed by proteins in the bodies of living organisms?
7.	Discuss Watson & Crick model of DNA.
8.	How asexual reproduction occurs in fungi.
9.	Explain sexual reproduction in Fungi.
10.	Describe and draw/sketch life cycle of Rhizopus.
11.	Give the adaptations of fungi on land.
12.	Write any four economic gains due to fungi.
13.	Write a note on economic losses due to fungi with a reference to animal diseases only.

Long Question No. 7

1.	Define Fluid Mosaic Model & functions of plasma membrane.
2.	Write a detailed note on Endoplasmic Reticulum.
3.	Describe the structure and function of Mitochondria.
4.	Describe the structure and functions of chloroplast.
5.	What are plastids? Explain structure and function of chloroplasts.
6.	Differentiate between Parokaryotic and Eukaroytic Cells
7.	Describe nutrition in insectivores plants.
8.	Explain digestion in cockroach. (Make its diagram)
9.	Describe digestion cavity of man.
10.	Explain digestion in human stomach.
11.	Describe absorption of digested food in small intestine.

Long Question No. 8

1.	Discuss the five kingdom system of classification proposed by Robert Whittaker.
2.	Write a note on structure of viruses.
3.	Describe Life cycle of a Bacteriophage.
4.	Describe various steps of lytic cycle of phage virus (bacteriophage).
5.	Sketch the infection cycle of HIV.

6.	Define Hepatitis. Describe its causes and different types.
7.	Describe influx of k+ ions hypothesis to explain the opening and closing of stomata.
8.	Why transpiration is necessary evil?
9.	Explain different functions of human blood.
10.	Describe the composition of blood plasma.
11.	Write a note on cardiac cycle.
12.	Write down the main functions of lymphatic system in human body.

Long Question No. 9

1.	Discuss about bacterial cell wall.
2.	Give nutrition in Bacteria.
3.	Discuss growth and reproduction in bacteria.
4.	Describe different physical and chemical methods to control bacteria.
5.	Write a note on use and misuse of antibiotic.
6.	Describe general characteristics and economic importance of Cyanobacteria.
7.	Prove that water is a source of oxygen in photosynthesis.
8.	Briefly describe the steps involved in the non-cyclic phosphorylation.
9.	Discuss the non-cyclic phosphorylation with diagram.
10.	What is Glycolysis? Sketch its various steps only. (No Description)
11.	Explain krebs cycle. (Give only outline of kreb cycle)