

307. Single Circuit heart is found in: (9 Time)
 (a) Birds (b) Fishes (c) Reptiles (d) Mammals
308. The left systemic arch disappears in: (4 Time)
 (a) Mammals (b) Fish (c) Reptiles (d) Birds
309. The plasma proteins constitute percent by weight of plasma: (4 Time)
 (a) 7-9% (b) 9-11% (c) 11-13% (d) 13-15%
310. Normal pH of human blood is: (7 Time)
 (a) 4.4 (b) 5.4 (c) 6.4 (d) 7.4
311. Platelets are fragments of large cells called: (2 Time)
 (a) Microkaryocytes (b) Erythrocytes
 (c) Megakaryocytes (d) Leucocytes
312. In the embryonic life red blood cells are formed in the: (2 Time)
 (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 Time)
 (a) Heparin (b) Fibrinogen (c) Fibrin (d) Thrombin
314. Antiserum is a serum containing: (1 Time)
 (a) Hormones (b) Antigen (c) Enzyme (d) Antibodies
315. The uncontrolled production of white blood cells result in: (1 Time)
 (a) Leucaemia (b) Thalassaemia
 (c) Oedema (d) Asthma
316. The renal vein brings the impure blood form: (4 Time)
 (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 Time)
 (a) 0.2 sec (b) 2 sec (c) 0.8 sec (d) 1.0 sec
318. The valves present in the veins are: (2 Time)
 (a) Bicuspid (b) Tricuspid (c) Semi lunar (d) Aortic
319. Discharge of Blood from Blood vessel is called as: (4 Time)
 (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 (SQs)

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 of vaporization of water.
5. Differentiate between amylose and amylopectin starches?
6. Differentiate between glycosidic and peptide bond.
7. Sketch Ribofuranose and Glucopyranose.
8. What are oligosaccharides?
9. What are lipids? Give two roles of waxes.
10. Differentiate between saturated and unsaturated fatty acid.
11. Draw structural formula of glycylalanine.
12. Give general 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 enzyme 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 plasmogamy.
37. What are dikaryotic hyphae?
38. How Budding differ from fragmentation?
39. How spore are differ from conidia?
40. What are smuts?
41. What is asexual reproduction 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 enterocoelous 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 disinfections?
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 (SQs)

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 far.
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 mosaic 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 down 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 lime 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 thallus 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 CO₂ 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. What 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 (SQs)

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 capsomere.
193. What are prions?
194. What are capsomeres and what is their number in adenovirus?
195. How viion differs from prion?
196. Differentiate between lytic and lysogenic phage.
197. What are the symptoms of AIDS?
198. What are mumps and measles?
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 Jenner 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 between 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 saprophytic 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

LONG QUESTION NO. 5

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| <ul style="list-style-type: none"> ✓ Differentiate between deductive and inductive reasoning with examples. ✓ Explain the biological method for solving a biological problem. ✓ How study of Biology helped mankind to improve production of food. ✓ Define cloning, discuss its types and the commercial importance of the technique. ✓ What is the role of study of Biology in the welfare of mankind in the field of protection and conservation of environment? ✓ Describe the role of drug treatment and gene therapy in disease control. | <ul style="list-style-type: none"> ✓ List the air passage way in the sequence from nostrils to alveoli. Describe the structure of alveolus in detail. ✓ Explain inspiration and expiration in man. ✓ In what ways air is better respiratory medium than water? ✓ In what ways, respiration is birds the most efficient and elaborate? |
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LONG QUESTION NO. 6