BIOLOGY

1. Study of birds is called:
   a. Haematology b. Ornithology
   c. Saurology d. Rhinology
2. Migration of birds is studied under:
   a. Ethology b. Kalology c. Ethnology d. Phenology
3. Lepidpterology is the study of:
   a. moths b. insects
   c. moths & butterflies d. mosquitoes & houseflies
4. Study of tissue is called:
   a. Ecology b. Cytology
   c. Histology d. Anatomy
5. The term biology is coined by:
   a. Lamarck & Traviranus b. Darwin
   c. John Ray d. Aristotle
6. We study Amoeba & Plasmodium under
   a. Parazoology b. Protozoology
   c. Parasitology d. Epidemiology
7. Ethnology is the science of:
   a. birds b. human races c. animal behaviors d. bird nest
8. Study of body viscera is called:
   a. Angiology b.conchology
   c. Splanchnology d. Rhinology
9. Study of liver is called:
   a. Herpetology b. Horology c. Hepatology d. Phenology
10. Study of (molluscan) shells is called:
    a.Malacology b. Conchology c. Ethology d. Secology
11. Study of fishes is known as:
    a. Saurology b. Arthrology c. Floriculture d. Ichthyology
12. Study of flowers is called:
    a. Anthology b. Phenology c. Floriculture d. Agrostology
13. Teratology deals with:
    a. Development abnormalities b. Aging
    c. Hairs d. Improvement of human race
14. Tricology is the study of:
    a. Tetrapods b.Hairs
    c. Developmental abnormalities d. Aging
15. This study deals with growing old:
    a. Teratology b. Gerontology
    c. Angiology d. Pathology
16. Saurology is the study o f:
    a. lizards b. snakes c. blood serum d. nucleus
17. Study of structure, physiology, biochemistry, development, evolution, genetics of a cell is called:
    a. cytology b. histology
    c. cell biology d. molecular biology
18. Malacology is the study of _____.
    a. shells b. mammals c. muscles d. molluscs
19. Study of joints is:
    a. Osteology b. Chondrology
    c. Craniology d. Arthrology
20. Karyology is the study of:
    a. Cytoplasm b. cell c. Mitochondria d. Nucleus
21. Skin diseases are studied under:
    a. Dermatology b. Pathology
    c. Chondrology d. Splanchnology
22. Vegetable cultivation comes under:
    a. Horticulture b. Agriculture
    c. Olericulture d. Floriculture
23. Father of Botany is called:
    a. Linnaeus b. Aristotle c. Theophrastus d. Cardiology
24. Study of heart is called:
    a. Chondrology b. Angiology
    c. Haematology d. Cardiology
25. Phycology is the study of:
    a. Algae b. Fungi c. Microbes d. Bryphytes
26. Study of the relationship between environment and plants or humans is:
    a. Mycology b. Ethno botany c. Ethology d. Ecology
27. Study of fungi is called___
    a. Phycology b. Mycology
    c. Palynology d. Malacology
28. The first microscope was invented by___
    a. Leewenhoek b. Hooke

c. E Janssen & Z Janssen d. Schleiden

29. Egg laying mammal is___
    a. Rat b. Platypus c. Kangaroo d. the statement is wrong
30. An A^0 is equal to
    a. 10^{-5}cm b. 10^{-6}cm c. 10^{-7}cm d. 10^{-8}cm
31. Plants which flower only once are:
    a. Pericarpic b. Monocarpic
    c. Polycarpic d. Cleistocarpic
32. Physical basis of life is:
    a. cell b. Protoplasm c. Nucleus d. Food
33. Resemblance of one organism to the other of different species for protection is termed as:
    a. Mimicry b. Predation
    c. Adaptation d. Camouflage
34. Viruses are:
    a. Obligate parasites b. Obligate saprophytes
    c. Partial parasites d. Facultative parasites
35. Viruses are:
    a. free genes b. unicellular c. multicellular d. acellular
36. Viruses possess:
    a. DNA only b. Nucleic acid, DNA or RNA
    c. Protein only d. Nucleic acid and protein
37. AIDs virus contains:
    a. DNA only b. RNA only
    c. DNA+ protein d. RNA+ protein
38. 80% of the living material of a cell is made of:
    a. minerals b. Protein c. Water d. Fats
39. Ultimate source of energy is:
    a. ATP b. Glucose c. Sun d. food
40. Bacteriophage is a:
    a. Mycoplasma b. Virus c. Rickettsia d. Spirochaete
41. Genetic material of a virus is:
    a. DNA b. RNA
    c. DNA or RNA but not both d. None of the above
42. Protein cover of virus is:
    a. capsid b. Virion c. Viroid d. Bacterial wall
43. Life originated in:
    a. Air b. Soil c. Mountains d. Water
44. Atmosphere of earth just before the origin of life consisted of:
    a. Water vapour, CH_4, NH_3 oxygen b.CO_2 NH_3 & CH_4
    c. CH_4, NH_3, H_2 & Water vapour d. CH_4, O_3, O_2 & Water vapour
45. Which was absent in the atmosphere at the time of the origin of the life?
    a. NH_3 b. H_2 c. O_2 d. CH_4
46. Moon does not possess life because it is without:
    a. water b. carbon
    c. Nitrogen d. Silicates
47. The first organisms were _____
    a. Chemoautotrophs b. Chemoheterotrophs
    c. Autotrophs d. Eukaryotes
48. Russian scientist who proposed the theory of origin of the life was:
    a. Oparin b. Haldane c. Miller d. Fox
49. Father of botany is:
    a. Hippocrates b. Aristotle c. Plato d. Theophratus
50. The term ‘species’ was coined by:
    a. John Ray b. Linnaeus c. Darwin d. Aristotle
51. The science of naming plants:
    a. Identification b. Nomenclature
    c. Classification d. Taxonomy
52. Natural system of classification is based on:
    a. Ontogeny b. Phylogeny
    c. Morphology d. morphology and Phylogeny
53. Scientific name in binomial nomenclature is derived from:
    a. English b. Sanskrit c. Latin d. French
54. A system of classification in which a large number of traits are considered is:
    a. Artificial system b. Phylogenetic system
    c. Synthetic system d. Natural system
55. Basic unit of taxonomy is:
    a. species b. kingdom c. family d.variety
56. Father of taxonomy is:
    a. De Candolle b. Hooker c. Linnaeus d. Aristotle
57. Binomial nomenclature consists of two words:
    a. Genus and species b. Order and family

c. Family and genus d. Species and variety

58. Species is a group of organisms that
    a. can interbreed b. cannot interbreed
    c. live together d. none of the above
59. A binomial nomenclature has words/parts.
    a. Five b. Three c. Two d. One
60. Which one is a taxon?
    a. Order b. family c. Genus d. All of the above
61. A unicellular organism often considered connecting link between plants and animals is:
    a. Monocystis *b. Paramecium*
    c. Euglena *d. Entamoeba*
62. Thallophyta includes:
    a. Fungi & bacteria b. Algae, Fungi, bacteria and lichens
    c. Algae, Fungi and lichens d. Algae and Fungi
63. A quality found in plants but not in animals is
    a. metabolism b. sexual reproduction
    c. Autotrophy d. asexual reproduction
64. Whittaker proposed:
    a. Two kingdom classification
    b. Four kingdom classification
    c. Five kingdom classification
    d. Three kingdom classification
65. Protista includes:
    a. Heterotrophs b. Chemoautrophs
    c . Chemoheterotrophs d. All of the above
66. In Whit taker's classification, non-nucleated unicellular organisms and prokaryotes are included under:
    a. plantae b. Monera c. Protista d. Animalia
67. Four kingdom classification was proposed by:
    a. whittaker b. Copeland c. Haeckel d. Linnaeus
68. In Whittaker classification eukaryotes are assigned:
    a. two of five kingdoms b. three of five kingdoms
    c. four of five kingdoms d. all of five kingdoms
69. Which one possesses characters of both plants and animals?
    a. bacteria b. mycoplasma
    c. paramecium d. euglena
70. Distinction of prokaryotes and eukaryotes is mainly based on:
    a. Nucleus only b. cell organelles only
    c. chromosomes only d. all of the above
71. On the basis of nucleus, virus should be placed in the kingdom:
    a. Prokaryotes b. Eukaryotes
    c. Both a & b d. nono of the above
72. Blue-green algae are placed in the kingdom:
    a. plantae b. protista c. fungi c. monera
73. First formed organisms were:
    a. animals b. plants
    c. neither plants or animals d. Protists
74. In two kingdom classification Prokaryotes are placed in:
    a. protozoa b. scyphozoa
    c. kingdom animalia d. kingdom plantae
75. Two kingdom classification was given by:
    a. Linnaeus b. Haeckel c. Whittaker d. Lamarck
76. Metazoa is characterized by:
    a. unicellular animals b. colonial animals
    c. multicellular animals d. multicellular decomposers
77. In five kingdom classification, unicellular green algae are included in the kingdom:
    a. Metaphyta b. Protista c. Monera d. Metazoa
78. Organisms included in five-kingdom classification are:
    a. Rickettsiae b. Viruses
    c. Mycoplasma d. Acchaebacteria
79. Whittaker proposed 5-kingdom classification in:
    a. 1969 b. 1959 c. 1978 d. 1988
80. Most primitive organisms are:
    a. Moreians b. Protista c. Fungi d. Metaphyta
81. Absorptive nutrition is:
    a. Holophytic b. Saprotrophic
    c. Parasitic d. both a & b
82. In five kingdom classification, Slime moulds are included under:
    a. Monera b. Protista c. Fungi d. Metaphyta
83. Who discovered bacteria?
    a. Leewvenhoek b. Lederberg
    c. Wolkmen & Zinder d. none of the above

84. There are _____ pairs of cranial nerves in humans.
a. 8 b. 10
c. 12 d. 14

85. When milk is heated at 62^0C for 30 minutes and then cooled, the process is called:
a. Sterilization b. Pasteurization
c. Nitrification d. Freezing

86. Pasteurization frees food stuffs of:
a. All bacteria
b. All living organisms
c. Vegetative forms of bacteria
d. Vegetative forms of all pathogenic bacteria

87. Nitrogen fixing organism which can be symbiotic is:
a. Anabaena b. Azotobacter
c. Liver worts d. Mosses

88. Which is rod-shaped?
a. *Vibrio cholerae* *b. Streptococcus nigricans*
c. Pneumococcus *d. Bacillus subtilis*

89. The folds of plasma membrane in bacterial cells are known as:
a. Episomes b. Mesosmes
c. Spherosomes d. Acrosomes

90. A. V. Leeuwenhoek discovered bacteria for the first time in
a. Soil b. Air
c. Rain water d. Actinomycetes

91. Smallest organisms capable of growth, division and reproduction are:
a. Bacteria b. Viruses
c. Mycoplasma d. Actinomycetes

92. The stored food in blue-green algae is:
a. Starch b. Glucose
c. Cellulose d. Related to glycogen

93. Bacteria having a single curve in their body are:
a. Bacilli b. Cocci
c. Vibrio d. Spirilla

94. Which one converts nitrite to nitrate?
a. Nitrosomonas b. Nitrobacter
c. Azotobacter d. Rhizobium

95. Land becomes slippery during rains due to:
a. Moss b. Brown Algae
c. Green Algae d. Blue-Green Algae

96. Leg hemoglobin occurs in:
a. Coralloid root b. BGA
c. Bacteroids d. Mycorrhiza

97. Bacterial plasmid contains:
a. RNA b. RNA+ Protein
c. DNA d. Photosynthetic structures

98. Pili are appendages of:
a. Mycoplasma b. Bacteria
c. Viruses d. Algae

99. Smallest living cells with cell wall are:
a. Bacteria b. Mycoplasma
c. Algae d. Viroids

100. Chemoautotrophs derive their energy from:
a. Sun b. Inorganic chemicals
c. Dead organisms d. Living organisms

101. Bacteria were regarded as plants because:
a. Some of them are green
b. They are present everywhere
c. Some of them can't move
d. They have a rigid cell wall

102. Bacteria having a tuft of flagella at one end we called:
a. Peritrichous b. Bitrichous
c. Amphitrichous d. Atrichous

103. The fixation of tree nitrogen by bacteria in the soil is done by:
a. Azotobacter b. Nitrosomonas
c. Nitrobacter d. Thiobacillis

104. Nitrifying bacteria convert the:
a. Nitrates into nitrites
b. Nitrites into nitrates
c. Ammonium salts into nitrates
d. Ammonium salts into amino acids

105. Antibiotics are mostly obtained from:
a. Bacteria b. Viruses
c. Angiosperms d. Fungi

106. Bacteria are classified on the basis of:

a. Nucleus b. Cell wall
c. Gram +ve & Gram –ve d. Method of nutrition

107. Rickettsiae is a group of:
a. Viruses b. Microorganisms
c. Bacteria d. PPLO

108. Protista includes:
a. Unicellular prokaryotes b. Unicellular eukaryotes
c. Bacteriophages d. Blue-Green algae

109. Mixotrophic nutrition is present in:
a. Navicula b. Amoeba
c. Paramecium d. Euglena

110. Contractile vacuoles of Paramecium are analogous to:
a. Sweat glands of mammals
b. Uriniferous tubules
c. Gastrovascular cavity of hydra
d. Typhlosole of earthworm

111. The locomotory organs of Amoeba are:
a. Flagella b. Pellicle
c. Pseudopodia d. Legs

112. If a pond dries, Amoeba
a. Reproduces b. Rencysts
c. Degenerates d. Behavior is uncertain

113. An intracellular parasite is _____ .
a. Entamoeba b. Ascaris
c. Plasmodium d. Both a & b

114. Paramecium feeds through
a. Undulating membrane b. General body surface
c. Oral groove d. Cytopyge

115. In plasmodium, gametocytes are formed in man, but do not develop fully in the R.B.C. because of:
a. Antibodies present in blood
b. Antigens present in blood
c. Higher temperature of blood
d. Lower temperature of blood

116. Schizont stage in life cycle of malarial parasite occurs in:
a. Erythrocytes of man b. Stomach of Anopheles
c. Blood of man d. Salivary glands of Anopheles

117. Amoebic dysentery is caused by:
a. Entamoeba b. Plasmodium
c. Trypanosoma d. Leishmania

118. The Poisonous substance released as a result of rupturing of schizont in R.B.C. of malarial patient is:
a. Haematin b. Haemoglobin
c. Haemozoin d. Haem

119. The cilia in paramecium are:
a. All equal b. All unequal
c. Longer at posterior end d. Longer at anterior end

120. Nutrition in Amoeba is:
a. Holophytic b. Parasitic
c. Holocoic d. Suprobic

121. Which protest reproduces both by binary fission and conjugation?
a. Amoeba b. *Paramecium*
c. Euglena *d. Monocystis*

122. Total parasites belong to:
a. Sporozoa b. Ciliata
c. Sarcodina d. Zooflagellata

123. Which of the following is photosynthetic?
a. *Paramecium* *b. Monocystis*
c. Leishmania *d. Euglena*

124. Genetic information in Paramecium is contained in:
a. Micronucleus b. Macronucleus
c. Both a & b d. Mitochondria

125. *Paramecium* is:
a. Saprobiotic b. Holozoic
c. Holophytic d. Parasitic

126. Locomotory organs are absent in:
a. Sporozoa b. Ciliates
c. Zooflagellates d. Rhizopods

127. *Entamoeba histolytica* is a
a. Free living protist
b. Malarial parasite
c. Intestinal parasite in humans
d. Blood parasite in mosquito

128. Exoerythrocytic schizogony in *Plasmodium* takes place in:

a. RBC b. WBC
c. Liver d. Heart

129. Which one caries malarial parasite to the host?
a. Male culex b. Male anopheles
c. Male Aides d. None of the above

130. Which of the following can start erythrocytic cycle?
a. Metacryptomerozoite b. Merozoite
c. Sporozoite d. Schizont

131. *Paramecium* moves about by:
a. Pseudopodia b. Cilia
c. Flagella d. Looping & crawling

132. Cerebral malaria is due to:
a.. *Plasmodium falciparum* *b. P. vivan*
c. P. malariae *d. P Ovale*

133. Malignant tertian malaria is due to:
a. Plasmodium falciparum b. P. vivan
c. P. Ovale d. P. malariae

134. Plasmodium belongs to the class:
a. Sarcodina b. Ciliata
c. Sporozoa d. Dinophycea

135. The infective stage of malarial parasite is:
a. Merozoite b. Sporozoite
c. Trophozoite d. Minuta form

136. Male mosquito does not transmit malarial parasite because
a. It lacks blood sucking mouth parts
b. It catches fever
c. It is too small to carry parasite
d. The parasite is killed in its stomach

137. Sporozoites of malarial parasite enter:
a. Erythrocytes of humans b. Liver cells of humans
c. Stomach of mosquito d. Salivary gland of mosquito

138. Periodic appearance of malaria symptoms appear due to periodic:
a. Entry of merozoites b. Attack of liver cells by merozoites
c. Formation of signet ring d. realease of pigment in blood

139. Schuffner's dots observed in erythrocytes are due to:
a. Filaria b. Malaria
c. Kala – Azar d. Giardia

140. The cycle of *Plasmodium vivax* if female Anopheles is:
a. Sexual cycle
b. Pre- erthrocytic schizogamy
c. exoerythrocytic Schizogamy
d. Post erythrocytic Schizogamy

141. Slime moulds belong:
a. Fungi b. Protista
c. Monera d. Plantae

142. Exflagellation in Plasmodium occurs in:
a. Merozoites b. Megagametocytes
c. Microgametocytes d. Metacryptomerozoites

143. Erythrocytic cycle of Plasmodium occurs in:
a. Liver b. Spleen
c. RBC d. Unit

144. In Plasmodium, gametocytes are formed from:
a. Schizont b. Trophozoite
c. Sporozoite d. Merozoite

145. The secondary host of Plasmodium is:
a. Male anopheles b. Female anopheles
c. Female culex d. Male culex

146. Presence of two nuclei, micro nucleus & a macro nucleus is characteristic of protistan group:
a. Sporozoa b. Ciliata
c. Flagellata d. Sarcodina

147. Protists obtain food as:
a. Photosynthesizers, symbionts & holotrophs
b. Photosynthesisers
c. Chemosynthesisers
d. Holotrophs

148. Who was awarded Nobel Prize in 1902 for the discovery of oocyst of Plasmodium?
a. Golgi b. Ronald Ross
c. Laveran d. Shortt

149. Which species of Paramecium contains 3 nuclei?
a. *P. caudatum* *b. P. arnelia*
c. P. multimicro nucleatum *d. P. Polycarpum*

150. Trophozoites of *Plasmodium* occur in:
a. Liver cells b. Spleen
c. Lymph channels d. RBCs
151. Multiple fission in *Plasmodium* is:
a. Gamogarny b. Schizogony
c. Sporulation d. None of the above
152. Development of gametocyte from merocoite of plasmodium occurs in:
a. RBC's
b. Liver cells
c. Stomach of female anopheles
d. All the above
153. Sporogony in material parasite occurs in:
a. Human liver
b. Human RBC's
c. Stomach of female anopheles
d. Stomach wall of female anopheles
154. Amoeba is _____ .
a. Herbivorous b. Carnivorous
c. Sanguivorous d. Omnivorous
155. The streaming movement of endoplasm is called _____ .
a. Cyclosis b. Endosmosis
c. Sol-gel theory d. None of the above
156. Female *Anopheles* pours its saliva while biting skin of man so as:
a. To realease sporozoites b. To cause irritation
c. To prevent clotting d. None of the above
157. Biological control of malaria is done by:
a. Gambusia b. Labeo
c. Scoliodon d. Exocoetus
158. Name the plant which kills mosquito larvae:
a. Hydrilla b. Ceratophyllum
c. Urticularia d. Vallisneria
159. Malaria fever occurs after the completion of
a. Erythrocytic schizogony b. Pre-erythrocytic schizogony
c. Gamogony d. None of the above
160. Mild tertian malaria is caused by:
a. Plasmodium malariae b. P. ovale
c. P. falciparum d. None of the above
161. Quinine is derived from the back of:
a. *Althaea* *b. Dalbergia*
c. Acacia *d. Cinchona*
162. Macro nucleus of Paramecium takes part in:
a. Transmission of hereditary characters
b. Controlling normal cellular metabolism
c. Production of variations & adaptability
d. All of the above
163. Outer covering of Paramecium is called:
a. Pellicle b. Cuticle
c. Plasmalemma d. plasma membrane
164. Cytopyge or Cytoproct of paramecium is meant for:
a. Ingestion b. Osmoregulation
c. Reproductions d. Egestion
165. Organelles of offence and defence in paramecium are:
a. Trichocysts b. Nematocysts
c. Cilia d. Kinetosomes
166. Which species of plasmodium is not found in Nepal?
a. Vivax b. Malariae
c. Ovale d. Falciparum
167. *Leishmania* falls under the class:
a. Sporozoa b. Ciliata
c. Sarcodina d. Zooflagellata
168. Pseudopodia are the locomotory organs in the class:
a. Sporozoa b. Ciliata
c. Sarcodina d. Zooflagellata
169. Flagella are the locomotory organs in:
a. Sporozoa b. Ciliata
c. Sarcodina d. Zooflagellata
170. Animals floating passively on water surface are?
a. Phytoplankton b. Zooplankton
c. Nekton d. Pelagic
171. Animals that move about or swim about in sea are:
a. Plankton b. Sedentary
c. Pelagic d. Benthic
172. Animals floating or swimmimg in surface film of water are:
a. Neuston b. Nekton

c. Pelagic d. Seston

173. Actively swimming animals constitute:
a. Tripton b. Seston
c. Nekton d. Plankton

174. Bottom dwelling animals constitute:
a. Plankton b. Nekton
c. Tripton d. Benthos

175. Level of organization in sponges is:
a. Cellular level b. Acellular level
c. Tissue level d. Organ-system level

176. Level of organization found in Hydra & Jellyfish is:
a. Cellular b. Acellular
c. Tissue d. Spherical

177. In Hydra, the symmetry is:
a. Absent b. radial
c. Bilateral d. spherical

178. The symmetry found in an animal which can be divided into two similar haves by one plane only is:
a. Radial b. Biradial
c. Spherical d. Bilateral

179. Radial symmetry occurs in:
a. Fishes b. Human beings
c. Molluscs d. Star fishes

180. Majority of sponges are:
a. Asymmetrical b. Radially symmetrical
c. Spherically symmetrical d. Bilaterally symmetrical

181. The phylum/phyla showing radial symmetry:
a. Porifera b. Coelenterata
c. Echinodermata & Coelenterata
d. Coelenterata & Platyhelminthes

182. Tube within- a tube body plan is shown by:
a. Coelenterates b. Platyhelminthes
c. Aschelminthes d. Porifera

183. Blind sac body plan is shown by:
a. Roundworms b. Annelids
c. Coelenterates d. Arthropods

184. An opening serving both as mouth and anus is found in:
a. Coelenterates & Porifera
b. Coelenterates & Platyhelminthes
c. Coelenterates & Annelids
d. Coelenterates & Platyhelminthes

185. Diploblastic animals occur in:
a. Annelida b. Porifera
c. Coelenterata d. Both b & c

186. A coelem is absent in:
a. Porifera b. Coelenterata
c. Platyhelminthes d. All of the above

187. A phylum with triploblastic acoelomate animals is:
a. Platyhelminthes b. Aschelminthes
c. Platyhelminthes d. All of the above

188. Pseudo coelom is found in:
a. Arthropoda b. Annelida
c. Aschelminthes d. Mollusca

189. Echinoderms & chordates have:
a. Pseudocuelom b. Schizocoelom
c. Enterocoelom d. Haemocoel

190. Haemocoel occurs in:
a. Earthworm b. Hydra
c. Cockroach d. Leech

191. An animal with metameric segmentation is:
a. Housefly b. Earthworm
c. Roundworm d. Planaria

192. Sponges & Coelenterates resemble each other in being:
a. Monoblastic & acoelomate
b. Diploblastic & acoelomate
c.Triploblastic & acoelomate
d Triploblastic & Pseudocoelomate

193. Metamerism is characteristic of:
a. Platyhelminthes b. Mollusca
c. Porifera d. Annelida

194. Body doesn’t show any segmentation in:
a. Frog b. Cockroach
c. Earthworm d. Starfish/Hydra

195. Animals having a well marked digestic system are under:

a. Parazoa b. Enterozoa
c. Mesozoa d. Metazoa

196. Hoemocoel is present in:
a. Hydra b. Earthworm
c. Nereis d. Scopolendia

197. A ture coelom is absent in phylum:
a. Nematoda b. Annelida
c. Echinodermata d. Mollusca

198. An animal devoid of anus is:
a. *Unio* *b. Fasciola*
c. Pheritima *d. Periplaneta*

199. On the basis of organization, animals are grouped into:
a. Metazoa & Eumetazoa b. Protozoa & Metazoa
c. Protozoa & Parazoa d. Parazoa & Metazoa

200. True coelom is covered by:
a. Ectoderm b. Ectoderm & endoderm
c. Mesoderm d. Endoderm

201. Binomial nomenclature was introduced by:
a. De Vries b. Carolus Linnaeus
c. Huxley d. John Ray

202. First act in Taxonomy is:
a. Description b. Identification
c. Naming d. Classification

203. Branch connected with nomenclature, identification & classification is:
a. Ecology b. Taxonomy
c. Morphology d. Physiology

204. Sequence of taxonomic categories is:
a. Class-Phylum-Tribe-Order-Family-Genus-Species
b. Division-Class-Family-Tribe-Order-Genus-Species
c. Division-Class-Order-Family-Tribe-Genus-Species
d. Phylum-Order-Class-Tribe-Family-Genus-Species

205. 'Father of Zoology' is:
a. Carolus Linnaeus b. Aristotle
c. John Ray d. Buffon

206. The study of Sponges is called:
a. Protozoology b. Parazoology
c. Nematology d. Helminthology

207. The study of Coelenterates is known as:
a. Arthrology b. Nephrology
c. Cnidology d. Nidology

208. Which is a fresh water Cnidarian?
a. Hydra b. Spongilla
c. Dugesia d. None of the above

209. The intercommunicating cavities in the body of a sponge constitute:
a. Water vascular system b. canal system
c. Circulating system d. None of the above

210. The Epidermis of sponges is made up of:
a. Thesocytes b. pinacocytes
c. Choanocytes d. Archeocytes

211. The totipotent cells of sponge are:
a. Archaeocytes b. pinacocytes
c. Choanocytes d. Trophocytes

212. The nutrition in sponges is:
a. Holozoic b. Holophytic
c. Saprozoic d. Mixotrophic

213. Which is inhalant aperture in sponges?
a. Prosopyle b. Apopyle
c. Osculum d. Ostium

214. Name the fresh water sponge:
a. Spongia b. Sycon
c. Euplectella d. Spongilla

215. Which is a collared cell?
a. Sceleroblast b. Silicoblast
c. Chromocyte d. Choanocyte

216. Ingestion in sponge is by:
a. Pinacocytes b. Archaeocytes
c. Trophocytes d. Choanocytes

217. Choanocytes are:
a. Ectodermal b. Mesodermal
c. Endodermal d. Interstitial

218. Asexual buds in sponge are called:
a. No des b. Buds
c. Gemmules d. Gastrulae

219. Sponges are:

a. Monoblastic b. Diploblastic
c. Triploblastic d. None of the above

220. Coelenterates are:
a. Diploblastic b. Triploblastic
c. Monoblastic d. None of the above

221. The number of tentacles in *Hydra* is:
a. 6-10 b. 10-16
c. 16-20 d. 30-40

222. *Hydra* is a coelenterate because it possesses
a. Mesoglea b. Tentacles
c. Enteron & cnidoblasts d. Mouth

223. Which of the following is not a class of porifera?
a. Calcarea b. Hydrozoa
c. Hexatinellida d. Demospongea

224. *Sycon* belongs to the class:
a. Calcarea b. Hexatinellida
c. Desmospongea d. None

225. Which of the following classes can include fresh water species?
a. Calcarea b. Hexatinellida
c. Demospongea d. None

226. *Metridium* belongs to the class…….in coelenterates
a.Hydrozoa b.scyphozoa c. Actinozoa d. None

227. Medusoid forms are predominant in:
a. Hydrozoa b. Scyphozoa
c. Actinozoa d. None

228. Digestion in *Hydra* is:
a. Inter cellular b. Intra cellular
c. Both d. None

229. The 'Mesoglea' is formed by:
a. Epidermis
b. Gastrodermis
c. Epidermis & Gastrodermis
d. Mesoderm

230. Undigested food of Hydra is expelled from:
a. Mouth b. Anus
c. General surface d. Hypostome

231. *Hydra* is:
a. Insectivorous b. Frugivorous
c. Omnivorous d. Carnivorous

232. Hypnotoxin is:
a. Protein b. carbohydrate
c. Lipid d. None

233. Hypnotoxin is produced by:
a. Protozoa b. Porifera
c. Coelenterate d. platyhelminthes

234. Classification of Porifera is based on:
a. Branching b. Spicules
c. Reproduction d. Symmetry

235. Mesoglea of Porifera & coelenterate contains:
a. Nerve cells b. Sensory cells
c. No cells d. Branches of muscle cells

236. Water current in a sponge is maintained by:
a. Pinacocytes b. Porocytes
c. Choanocytes d. Amoebocytes

237. Jelly- fishes belong to the class:
a. Hydrozoa b. Scyphozoa
c. Anthozoa d. None of the above

238. *Hydra*/ *Obelia* is:
a. Diploblastic, radially symmetrical & acoelomate
b. Diploblastic, bilaterally symmetrical & coelomate
c. Triploblastic, rudially symmetrical & coelomate
d. Triploblastic, rudially symmetrical & coelomate

239. Body cavity of *Hydra* is called:
a. Enterocoel b. Coelenteron
c. Gastrovasular cavity d. Both b & c

240. Common Bath Sponge is:
a. *Spongilla* *b. Euspongia*
c. Leucosolenia *d. Sycon*

241. The simplest type of canal system in Porifera is:
a. Ascon type b. Leucon type
c. Sycon type d. Radial type

242. Muscles of Hydra are:
a. Smooth b. Skeletal
c. Both a & b d. None of the above

243. Which one of the following animals possesses nerve cells but no nerves?
a. Hydra b. Tapeworm
c. earthworm d. Frog's tadpole

244. Poisonous fluid present in nematocysts of Hydra is:
a. Hypnotoxin b. Haematin
c. Haemozoin d. Agglutinogen

245. Nematocysts take part in:
a. Locomotion b. Offence & Defence
c. Food capture d. All of the above

246. Osculum occurs in:
a. Star fish b. Ray fish
c. Hydra d. Sponge

247. The study of worms is called:
a. Nematology b. Cnidology
c. Helminthology d. Anthrology

248. What is the most important character of Platyhelminthes?
a. Monoecious b. Vitelline glands
c. Flat animals d. Flame cells

249. Flat worms are:
a. Diploblastic b. Triploblastic
c. Monoblastic d. None of the above

250. Coelom in flat worms is;
a. Well developed b. Poorly developed
c. Schizocoel d. Absent

251. Which is a free living fresh water flat worm?
a. *Planaria* *b. Schistosoma*
c. Fasciola *d. Taenia*

252. Vital system absent in Tapeworm is:
a. Nervous system b. Digestive system
c. Excretory system d. Reproductive system

253. In Platyhelminthes:
a. Nerve cords are present b. Nerve cords are absent
c. Nerve nets are present d. Nerve nets are absent

254. Segments of Tapeworm are called:
a. scolex b. Cysticercus
c. Proglottides d. Onchospheres

255. The tissue in platyhelminthes between viscera & body wall is called:
a. Coelom b. Parenchyma
c. Mesoderm d. Choanoderm

256. Platyhelminthes phylum is also called flat worm because:
a. Their head is flat
b. they have a dorsiventrally compressed body
c. They creep over the surface
d. the alimentary canal is flattened

257. Scolex occurs in:
a. *Hydra* *b. Ascaris* *c. Taenia* d. Liver fluke

258. The posterior end of male Ascaris is:
a. Straight b. thickened c. Coiled d. Curved

259. Apolysis is:
a. removal of mature proglottides
b. Removal of immature proglottides
c. Removal of gravid segments
d. None of the above

260. *Fasciola hepatica* is:
a. Blood fluke b. Liver fluke
c. Tapeworm d. Roundworm

261. The epidermis of *Ascaris* is:
a. multicellular b. Syncytial
c. Columnar d. Cuboidal

262. Alimentary canal of *Ascaris* is:
a. Complete b. Incomplete
c. Absent d. Rudimentary

263. *Ascaris* is:
a. Diploblastic b. triploblastic
c. Monoblastic d. Ablastic

264. Flat worms have:
a. a pair of appendages b. 2 pairs of appendages
c. 3 pairs of appendages d. No appendages

265. Platyhelminthes are:
a. asymmetrical b. radially symmetrical
c. bilaterally symmetrical d. None

266. Tapeworms belong to the class:
a. Turbellaria b. Trematoda

c. Cestoda d. None

267. Flukes belong to the class:
a. Turbellaria b. Trematoda
c. Cestoda d. None

268. Ribbon like body is characteristic of:
a. Tapeworms b. Roundworms
c. Flukes d. Glowworms

269. Leaf like body is characteristic of:
a. Tapeworms b. Roundworms
c. Flukes d. Glowworms

270. *Planaria* belongs to the class:
a. Turbellaria b. Tremotoda
c. Cestoda d. Hydrozoa

271. Which of the following is not a class of Aschelminthes?
a. Nematoda b. Rotifera
c. Turbellaria d. Kinorhyncha

272. *Ascaris* belongs to the class:
a.Nematoda b. Rotifera
c. Kinorhyncha d. Gastrotricha

273. Tapeworms obtain their food from the host by:
a. sucking b. scraping c. absorption d. autotrophic

274. Syncytial epidermis occurs in.
a. *Ascaris* *b.Hydra*
c. Leucosolenia *d. Taenia*

275. Tapeworm doesn't possess a digestive system because:
a. it doesn't require solid food
b. it obtains food through general body surface
c. doesn't require food
d. lives in intestine

276. Flame cells are main excretory structures of:
a. Coelenterates b. Platyhelminthes
c. Annelida d. Echinodermata

277. Roundworms differ from flatworms in possessing:
a. Flame cells b. Pseudocoelom
c. Segmented body d. Production of antienzymes

278. Pseudocoel occurs in:
a. *Hydra* b. *Ascaris* c. Cockroach d. Earthworm

279. Anus is absent in:
a. Fasciola b. Pheritima c. Periplaneta d. Unio

280. The study of worms causing parasitic infestations in humans is:
a. Helminthology b. Ichthyology
c. Malacology d. Herpetology

281. Solenocytes are excretory structures of:
a. Echinoderms b. Annelids
c. Platyhelminthes d. Molluscs

282. The unique characteristic of annelida is:
a. Coelom b. Nephridia
c. Hermaphrodite d. Alimentary canal is complete

283. If the skin of *Pheritina* dries, it will die of:
a. Starvation b. Dehydration
c. Asphyxia d. Noise

284. Excretory organs of an earthworm are:
a. Nephridia b. Flame cells
c. malpighian tubules d. Green glands

285. In earthworm the pharyngeal nephridia occur in segments:
a. 4, 5 & 6 b. 5,6 & 7 c. 6,7 & 8 d. 3,4 & 5

286. In earthworm the septal nephridia begin from behind segments:
a. 18 b. 17 c. 15 d. 13

287. Respiratory pigment in earthworm is present in:
a. Erythrocytes b. Plasma
c. Yellow cells d. Mucocytes

288. Earthworm is very delicate. Its body wall is:
a. without cuticle b. with cuticle
c. naked d. None of the above

289. Integumentary nephridia of earthworm occur in:
a. All segments except the first two
b. First two segments of the body
c. First fifteen segments
d. All the segments

290. In earthworm, the spermathecae occur in:
a. 4-7 segments b. 5-8 segments
c. 6-9 segments d. 7-10 segments

291. Annelids are:
a. Flatworms b. Roundworms

c. 6-legged cavity d. invertebrates

292. Earthworm respires by means of:
a. Nephridia b. Moist skin
c. Buccal cavity d. Lungs

293. In Earthworm, the function of chloragogen cells is:
a. Excretion b. Reproduction
c. Digestion d. Regeneration

294. The major characteristic of phylum Annelida is:
a. Flame cells b. Metameric segmentation
c. Botryoidal tissue d. trochosphere

295. The first segment of annelids is:
a. Prostomium b. Peristomium
c. Prestomium d. Poststomium

296. Blood pigment of annelids is:
a. Haemoglobin b. Cyanin
c. Haemanin d. Haemocyanin

297. Blood of *Pheritima* is:
a. Red b. Blue c. Colorless d. None of the above

298. Circulatary system of *Pheritima* is of:
a. Open type b. Closed type
c. Both d. None

299. Body cavity of earthworm is:
a. Schizocoel b. Enterocoel
c. Pseudocoel d. None of the above

300. Leech does not allow blood clotting by:
a. Heparin b. thromboplastin
c. Hirudin d. Aphrodite

301. In earthworm, setae do not occur in the system of:
a. Prostomium & Peristomium
b. Anal segment
c. Clitellum
d. All the above

302. Clitellum lies in segments:
a. 26-40 b. 24-28 c. 100-110 d. 14-16

303. Dorsal pores of earthworm are meant for passage of:
a. Coelomic fluid b. Blood
c. Waste materials d. Gametes

304. Metameric segmentation is:
a. External segmentation corresponding to internal segmentation
b. Segmentation present in only a part of the individual
c. Segmentation found in the middle part of the body
d. Posterior segmentation

305. O_2 is carried from skin to different parts of the body in earthworm by:
a. Blood plasma b. Blood corpuscles
c. Both a & b d. A special pigment

306. Region of earthworm which is a forest of nephridia is:
a. Clitellar region b. Pharyngeal region
c. Both a & b d. Typhlosolar

307. Chloragogen cells are found in:
a. Body wall of sponges
b. Blood of earthworm
c. Coelomic fluid of earthworm
d. Blood of Cockroach

308. In earthworm, genital papillae occur in segments:
a. 16 -17 b. 16-18
c. 17-19 17-18

309. Flow of blood in dorsal blood vessel of earthworm is:
a. Backward b. Forward
c. Sideward d. Downward

310. The female genital aperture is present ventrally on the segment:
a. 10^{th} b. 12^{th}
c. 14^{th} d. 18^{th}

311. Locomotion in earthworm is directly facilitated by:
a. Mucus secreted by epidermis
b. Segmentation of the body
c. Rhythmic contraction of segments
d. Setae & contraction of segments

312. In earthworm male genital apertures are present ventrally in the segment:
a. 14^{th} b. 15^{th} c. 17^{th} d. 18^{th}

313. Hearts of *Pheritima* are situated in the segments:
a. 10, 13, 16 & 17 b. 7, 9, 12 & 13
c. 4, 5, 10 & 13 d. 11, 14, 17, & 18

314. In earthworm, fertilization occurs in:

a. Oviduct b. Spermatheca
c. Clitellum d. Cocoon

315. The main function of clitellum is:
a. Cocoon formation b. Locomotion
c. Excretion d. Copulation

316. *Pheritima* is:
a. Sterile b. Hermaphrodite
c. Radially symmetrical d. Dioecious

317. Earthworm shows locomotion by means of:
a. Muscles
b. Setae
c. Parapodia
d. Setae, muscles & coelomic fluid

318. Major nitrogenous excretory material of earthworm is:
a. Uric acid b. Ammonia c. Urea d. Amino acids

319. Copulation in Earthworms occurs during the
a. Night in water b. Night in rainy season
c. Night in summer season d. day in rainy season

320. Spermathecae of earthworm
a. Store sperm b. Produce sperm
c. Activate sperm d. Bring about fertilization

321. Earthworm has
a. 2 eyes b. Many eyes c. No eyes d. Lateral sides

322. Photoreceptors of earthworm occur in:
a. Clitellum b. Anal segment
c. Dorsal surface d. Lateral sides

323. Earthworms are:
a. Useful
b. Harmful
c. More useful than harmful
d. More harmful

324. *Pheritima posthuma* is highly useful as:
a. Their burrows make the soil loose
b. They make the soil porous, leave their castings & take organic debris in the soil.
c. They are used as fish meal
d. None of the above

325. Earthworm possesses hearts:
a. 6 pairs b. 4 pairs c. 2 pairs d. 1

326. In earthworm, ovary is situated in the segment:
a. 13 b. 9 c. 10 d. 26

327. Typhlosole of Earthworm is a device for:
a. Extra secretion of digestive enzymes
b. Increasing absorptive area
c. Slowing down passage of food
d. Crushing of food

328. Suctorial mouth occurs in:
a. Butterfly b. Leech c. *Taenia* d. Cockroach

329. One of the oldest uses of earthworm is:
a. Food for poultry b. Bait for catching fish
c. Curing gout d. Source of manure

330. In Earthworm, testes occur in segments:
a. 12 &13 b. 10 & 11
c. 14 & 15 d. 17 & 18

331. Red colour of blood of earthworm is due to
a.pharynx b.buccal cavity
c.mouth d.stomach

332. In earthworm, effective organ for food digestion is:
a. pharynx b. Buecal cavity c. mouth d. stomach

333. Dorsal vessel of the earthworm is:
a. Distributing
b. collecting
c. collecting in first 13 segments and distributing in the rest
d. distributing in the first 13 segments and collecting in the restt

334. Typhlosole found in *Pheritima* occurs in :
a. Oesophagus b. Stomach c. gizzard d. intestine

335. *Nereis* belongs to:
a. Mollusca b. Arthropoda
c. Echinodermata d. Annelida

336. Which of the following is not a class of Annelida?
a. Rotifera b. Polychaeta
c. Oligochaeta d. hirudinea

337. Leech belongs to the class:
a. Polychaeta b. Oligochaeta

c. Hirudinea d. Auhiannelida

338. *Pheritima* belongs to the class:
a. Polychaeta b. Oligochaeta
c. Hirudinea d. Auhiannelida

339. A distinct clitellum is usually present in:
a. Polychaeta b. Oligochaeta
c. Hirudinea d. Archiannelida

340. Centipede has:
a. 150 legs
b. 200 legs
c. as many pairs of legs as body segments
d. as many legs as body segments

341. Tracheal respiration differs from other modes of respiration in taking air direct to
a. blood b. tissues
c. lungs d. body cavity

342. Maggot is:
a. larva of anopheles b. pupa of housefly
c. larva of housefly d. larva of dragonfly

343. Pupa of mosquitoes is also named:
a. Grub b. Tumbler c. Maggot d. Naiad

344. Which is living fossil?
a. Limulus b. Peripatus c. Lepisma d. Pediculus

345. Study of crustaceans is called:
a. limnology b. cardiology
c. Chondrology d. Carcinology

346. In crustacea, excretion is through:
a. Malpighian tubules b. Kidneys
c. Nephridia d. Antennary/green glands

347. *Julus* belongs to class
a. Insecta b. Chilopoda
c. Diplopoda d. Crustacae

348. Which respires by book lungs?
a. spider b. *Scolopendra*
c. *Palaeamon* d. *Anopheles*

349. Which phylum of animal kingdom has the maximum number of species
a. Chordata b. Mollusca
c. Arthropoda d. platyhelminthes

350. Blood colour of arthropods is :
a. colourless b. Reddish c. Bluish d. Yellow

351. Which one is the characteristics of the class crustacea/
a. cephalothorox with two pairs of antennae
b. gills & green lands
c. both a & b
d. none

352. Select the crustacean
a. cockroach b. cyclops c. dragonfly d. butterfly

353. Class arachnida is characterized by:
a. A pair each of pedipalpi & chelicerae b. 4 pairs of legs
c. Both a & b d. none

354. Which one is not an arachnid?
a. Spider b. Itchmite c. Louse d. Tick

355. Myriapoda includes;
a. Diplopods only b. Both diplopods & chilopods
c. Chilopods only d. Locusts

356. Diplopods (eg. Millipede) differ from chilopods(eg. Centipede) in:
a. occurrence of 2 pairs of legs on each segment
b. presence of pedipalpi
c. presence of chelicerae
d. absence of sting.

357. Entonomy is yhe study of :
a. Enteron b. Enteric epithelium
c. Insects d. Arachnids

358. Blood vascular system of the cockroach is:
a. Open type b. Closed type
c. Both d. none of the above

359. Phylum arthropoda is characterized by:
a. jointed appendages b. unjointed appendages
c. undeveloped appendages d. Absence of appendages

360. In arthropoda, respiration is accomplished by:
a. Book lungs & gills
b. trachea,book lungs and gills
c. trachea only

d. trachea in terrestrial habitat & gills in aquatic habitats

361. Excretory organs of arthropoda are:
a. Green glands b. Green glands & malpighian tubules
c. Malpighian tubules d. Nephridia

362. Male *Anopheles* differs from female in having:
a. Larger wings b. Spotted wings
c. Larger Antennae d. Brush like antennae

363. The period in between the 2 moults of insects is:
a. stadium b. Instar c. Incubation d. none of the above

364. Apiculture is :
a. culture of silkworm b. culture of honey bees
c. culture of ants d. culture of termites

365. Eggs of *Anopheles* are
a. singly laid with air floats b. singly laid without air floats
c. laid in groups with floats d. laid in groups without floats

366. Vector insects are which:
a. spread disease b. destroy crops
c. spoil soil d. act as scavengers

367. Excretory product in terrestrial insect is:
a. urea b. uric acid c. ammonia d. hippuric acid

368. Haemocoel is found in:
a. Hydra b. Sponge c. Earthworm d. scolopedra

369. Mosquito sitting at an acute angle is:
a. *Anopheles* *b. Culex* *c. Aedes* d. none

370. A character common among the centipede, spider & cockroach is:
a. Booklungs b. Green glands
c. Compound eyes d. Jointed legs

371. Structure common between earthworm & cockroach is:
a. Cocoon b. Ommatidia
c. Dorsal nerve cord d. ventral nerve cord

372. Blood doesn't transport O_2 in;
a. cockroach b. earthworm c. frog d. rabbit

373. *Anopheles* eggs float in the water due to
a. egg raft b. yolk c. air float d. all of the above

374. *Peripatus* is a connecting link between:
a. Annelida & Arthropoda b. mollusca & arthropoda
c. annelida & mollusca d. coelenterate & platyhelminthes

375. A characteristic common to cockroach, housefly & mosquito is;
a. three pairs of legs b. sucking mouth parts
c. long antennae d. two pairsof wings

376. Set of useful insects is:
a. wasp, anopheles & bedbug
b. bedbug, silk moth & anopheles
c. honey bee, bed bug & locust
d. cochineal insect, lac insect & honey bee

377. Silk thread is obtained from silk moth during:
a. pupal stage b. larval stage c. Nymph stage d. Adult stage

378. Which is _not an exclusive trait of arthropoda?
a. Presence of the wings b. Joined appendages
c. Haemocoel d. Chitinous exoskeleton

379. Casting off of old skeleton during growth of an animal is:
a. skinning b. moulting c. ecdysis d. both b & c

380. Bee dances are meant for:
a. courtship b. communication c. recreation d. instinct

381. Johnston's organ is found in:
a. antennae of the mosquito b. head of the cockroach
c. abdomen of housefly d. abdomen of spider

382. Which disease is spread by housefly?
a. Dengue fever b. Encephalitis
c. Filariasis d. Gangrene

383. In insects oxygen is carried to different tissues by;
a. diffusion through surface b. tracheal tubes
c. respiratory pigment through blood d. gills

384. In which of the following animals blood doesn't transport oxygen?
a. cockroach b. earthworm c. both a & b d. bird

385. Housefly transmits all the diseases except:
a. Cholera b. Dysentry c. yellow fever d. Typhoid

386. Silver fish, *Lepisma* is :
a. mammal b. insect/arthropod c. fish d. echinoderm

387. Rearing of silkworm is/ silk industry is related to:
a. Apiculture b. Pisci culture c. seri culture d. Horti culture

388. Housefly possesses
a. 2 pairs of wings b. 1 pair of wings
c. 3 pair of wings d. none of the above

389. Diagnotic feature of insects is:
a. 3 pairs of legs b. a pair of compound eyes
c. chitinous exoskeleton d. segmented body
390. Mouth parts present in female *Anopheles* but absent in male are:
a. Mavillae b. Antennae c. Proboscis d. Mandibles
391. Malpighian tubules are:
a. Excretory organs of insects
b. Excretory organs of annelids
c. Respiratory organs of insects
d. Respiratory organs of annelids
392. Which is not a member of class Insecta?
a. Musca b. Cockroach c. Louse d. Spider
393. Male mosquito feeds on:
a. Human blood b. Flower sap c. Garbage d. All the above
394. Adult *Culex* & *Anopheles* mosquito can be identified with the help of:
a. mouth parts/ colour b. sitting posture
c. Antennae/ wings d. Feeding habits
395. Spiders & Scorpions belong to the class:
a. Arachnida b. Anthozoa c. Crustacea d. Onychophora
396. Pupa occurs in the life cycle of :
a. cockroach b. housefly c. honey bee d. earthworm
397. Insects excrete nitrogen as :
a. Uric acid b. Guanine c. Urea d. Ammonia
398. The first animals to fly were:
a. mammals b. lizards c. birds d. insects
399. Which is non-poisonous?
a. Scorpion b. Centipede c. Crab d. Spider
400. Filaria is spread by:
a. *bed* Bug b. mosquito c. housefly d. flea
401. A class with the largest number of species;
a. Mammalian b. insecta c. reptilia d. pisces
402. Cray fish is :
a. Crustacean b. Edible fish
c. Poisonous fish d. Mammal
403. Green glands found in some arthropods take part in:
a. Excretion b. Respiration
c. Digestion d. both a & b
404. The muscles of arthropods are:
a. Striated b. smooth c. mixed d. none
405. Which of the following is present in arthropods as a means of respiration?
a. gills b. trachea c. book lungs d. all of the above
406. The circulatory system of arthropods is
a. closed type b. open(lacunar) c. mixed d. none
407. The blood of arthropods contains:
a. RBC only b. WBC & RBC
c. WBC only d. platelets only
408. Green glands are excretory organs in
a. terrestrial arthropods b. aquatic arthropods
c. aerial arthropods d. all of the above.
409. Tusk shell belongs to:
a. Amphineura b. Monoplacophora
c. Scaphopoda d. Cephalopoda
410. Which class shows 8 dorsal plates of shells?
a. Amphineura b. Monoplacophora
c. Scaphopoda d. Cephalopoda
411. Shell is internal in:
a. Monoplacophora b. Gastropoda
c. Pelecypoda d. Cephalopoda
412. In Echinodermata, locomotion is by means of:
a. Muscles b. feet
c. Ambulacral system d. none of the above
413. *Sepia* & *Octopus* are molluscus which can move swiftly by means of
a. arms b. lateral fins
c. suckers d. Jet propulsion through siphon
414. Which echinoderm is fresh water?
a. *Asterias* *b. Pentaceros*
c. Astropecten d. none of the above
415. Which gives the lily like appearance?
a. Brittle star b. *Pentaceros*
c. *Antedon* d. none of the above
416. Ink gland is present in :
a. *Loligo* b. *Sepia* c. Both d. none
417. Pearl is the secretion of:

a. mouth b. mantle c. kidney d. none

418. Sea mouse is a marine mollusk. Its scientific name is:
a. *Chiton* *b. Teredo* *c. Unio* d. *Nautilus*

419. The largest invertebrate is:
a. Giant Octopus b. Giant squid
c. Giant snail d. Giant clam

420. Osphradium is a structure in molluscus.It is a :
a. sensory organ for smell & chemicals
b. sensory organ for balancing
c. swimming organ
d. locomotory organ

421. Animals radially symmetrical in adults & laterally symmetrical in larvae are:
a. Coelenterates b. Polychaetes
c. Echinodermates d. Hemichordata

422. Madreporite is associated with:
a. water vascular system b. canal system
c. blood vascular system d. digestive system

423. A triploblastic animal with bilateral symmetry in larval stage but asymmetry in adult is:
a. Arachnid b. Echinoderm c. Gastropod d. none

424. Visceral mass is characteristic of:
a. Arthropods b. Molluscs
c. Echinoderms d. all of the above

425. Blood vascular system of molluscs is:
a. Reduced b. Open c. Closed d. Absent

426. Respiratory system of molluscs is:
a. Haemocyanin b. Haemoglobin
c. Erthrocruorin d. none

427. A mollusc that forms pearls is:
a. Neopilina b. Sepia c.Oyster d. Octopus

428. Pearl Oyster, belongs to:
a. Cephalopoda b. Scaphopoda
c. Gastropoda d. Pelecypoda

429. An animal intermediate between annelids & molluscs is;
a. *Squid* *b. Nautilus* *c. Neopilina* *d. Sepia*

430. A rasping organ with transverse teeth & present in the buccal cavity of molluscs is:
a. Dental b. Radula c. Tongue d. Rasper

431. Similarity between echinoderms and chordate:
a. Deuterostomatic tube within -a tube plan
b. Protostomatic tube within – a tube plan
c. Water vascular system
d. Kidneys

432. Water vascular system is a trait of:
a. Porifera b. Molluscus c. Echinoderms d. Arthopods

433. An echinoderm is:
a. Torpedo fish b. star fish c. electric ray d. shark

434. Starfish does not possess:
a. mouth b. anus c. head d. arms

435. Arms present in *Sepia* are
a. 12 b. 10 c. 8 d. 6

436. Star fish belongs to:
a. Asteriodea b. Ophioroidea
c. Holothuroidea d. Crinoidea

437. In cephalpoda:
a. Head is fused with foot b. Head is fused with thorax
c. Foot is located on head d. head is located on foot

438. Cuttle fish is a member of class:
a. Molluscs b. Echinodermata c. Pisces d. Amphibia

439. Cephalization is absent in:
a. Molluscs b. Arthropods
c. Both a & b d. Echinoderms

440. Octopus is a member of class:
a. Chaetopoda b. Pelecypoda
c. Gastropoda d. Cephalopoda

441. *Antedon* is a member of class:
a. Echinoidea b. Asteroidea
c. Crinoidea d. Ophiuroidea

442. A phylum exclusively marine is:
a. Coelenterata b. Porifera
c. Protozoa d. Echinodermata

443. Organs of locomotion in Echinodermata are:

a. Parapodia b. Pseudopodia c. Foot d. Tube feet

444. Which one occurs in Echinodermata ?
a. Bilateral symmetry b. Radial symmetry
c. porous body d. soft skin

445. Haemocyanin, the blue colouring pigment of molluscan blood contains:
a. Iron b. Magnesium c. copper d. Manganese

446. Echinodermata is a group of animals:
a. Coelomate, spiny & marine
b. Acoelomate, spiny & marine
c. Coelomate, horny & marine
d. Jointed legged, coelomate & marine

447. Which is the characteristic feature of Echinodermata ?
a. Vascular system b. Radial symmetry
c. Radial canal d. Ambulacral system

448. An animal without segmentation is:
a. Tapeworm b. Earthworm
c. Glow worm d. Shipworm

449. Which of the following is not a class of Mollusca?
a. Decapoda b. Gastropoda
c. Scaphopoda d. Cephalopoda

450. Tube feet occur in:
a. cockroach b. starfish c. cuttle fish d. cat fish

451. Closed circulatory system occurs in:
a. Snail b. Cockroach d. Cuttle fish d. all the above

452. Animals producing natural pearl belong to:
a. Echinodermata b. Cyclostomata c. mollusca d. fishes

453. Molluscan blood contains:
a. Haemoglobin b. Haemozoin
c. Haemocyanin d. All the above

454. Which molluscan group is primarily used in pearl peourtion?
a. Pelecypods b. Gastropods
c. Cephalopods d. Monoplacophorans

455. Which is not a member of echinodermata?
a. Starfish b. *Ascaris* c. Sealily d. *Ophiuthrix*

456. Which is unrelated?
a. Sea cucumber b. Sea star c. Sea urchin d. Sea squid

457. Octopus, squid& cuttle fish belong to the class;
a. Cephalopoda b. Apoda c. Decapoda d. Scaphopoda

458. Chordates differ from other animals in having a:
a. Notchord b. Ventral nerve cord
c. Dorsal heart d. Schizocoel

459. Chordates have
a. dorsal nerve cord b. dorsal tabular nerve cord
c. Brain d. Ventral nerve cord

460. Notochord occurs in the adult animal of:
a. Osteichthyes b. Chondrichthyes
c. Protochordata d. Cyclostomata

461. Which one of the following is a protochordate?
a. *Amphioxus* b. *Lamprey* c. *Labeo* d. *Exocoetus*

462. Which group of protochordate contains *Balanoglossus*?
a. Urochordata b. Cephalochordata c. Tunicata d. *Exocoetus*

463. Only the tail portion contains notochord in:
a. Chordata b. Cephalochordata
c. Hemichordata d. Urochordata

464. A free swimming urochordate is:
a. *Hermania* b. *Botryllus* c. *Salpa* d. *Ciona*

465. Flying fish is:
a. Torpedo b. Scoliodon c. Anguilla d. Excoetus

466. A member of cephalochordate is:
a. *Herdmania* *b. Ciona*
c. Amphioxus *d. Balanoglossus*

467. *Lamprey* belongs to:
a. Chondrichthyes b. Osteichthyes
c. Agnatha d. Amphibia

468. Agnatha or cyclostomata are characterized by:
a. Absence of jaws and presence of suctorial mouth.
b. Presence of suctorial mouth, absence of jaws, presence of single nostril & unpaired fins
c. Absence of mouth, presence of single nostril.
d. Round mouth with triradiate lips.

469. Non-tetrapod vertebrates contain:
a. Osteichthyes & Chondrichthyes
b. Agnatha, Osteichthyes & Chondrichthyes

c. Agnatha & Chondrichthyes
d. Agnatha

470. The most important character of chordate is:
a. Dorsal hollow nervous system b. Vertebral column
c. Kidneys d. none

471. Which is Protochordate?
a. *Herdmania* *b. Labeo* c. Lung fish d. none

472. Which is the connecting link between fishes & amphibians?
a. Cat fish b. *Gambusia*
c. *Protopterus* *d. Clupea*

473. Catadromous fishes migrate from:
a. Fresh to fresh water b. Fresh to marine water
c. marine to fresh water d. marine to marine water

474 .Anadromous fishes migrate from:
a. Fresh to fresh water b. Fresh to marine water
c. marine to fresh water d. marine to marine water

475. The number of appendages present in the most vertebrates is: ‘
a. one pair b. 2 pairs c. 3 pairs d. 4 pairs

476. Jawless vertebrates belong to:
a. Aneura b. Gnathostomata cAgnatha d. Dipnoi

477. Which is a missing link in birds & reptiles?
a. *Struthio* b. *Casuarias* *c. Apteryx* *d. Archeopteryx*

478. Symmetry found in vertebrates is :
a. Bilateral b. Biradial c. Radial d. Circular

479. In vertebrates, the heart lies:
a. middle of the thorax b. near stomach
c. Dorsal to gut d Ventral to gut

480. Which is the flightless bird?
a. Fowl b. Passer c. Kiwi d. none of the above

481. Teeth are absent in the jaws of :
a. Amphibians b. Fishes c. Birds d. mammals

482. Thin walled air sacs are connected with lungs in
a. Amphibians b. Reptiles c. Birds d. Mammals

483. In fish, the exoskeleton is made up of:
a. cartilage b. bones c. hairs d. scales

484. The largest living mammals is:
a. whale b. giraffe c. rhinoceros d. elephant

485. The respiratory organs in aquatic whale are:
a. gills b. lungs c. trachea d. skin

486. The tusk of an elephant is formed from:
a. skull b. canine c. incissors d. snout

487. The mammal that doesnot possess cervical vertebrae is:
a. horse b. giraffe c. elephant d. manatee

488. Ultrasonic sound is differentiated by:
a. cat b. dog c. bat d. bird

489. The limbless amphibian is:
a. Glass snake b. Hyala
c. Ichthyophis d. Scoliodon

490. Which of the following is lung fish?
a. *Exocoetus* b. *Neoceratodus*
c. *Necturus* d.*Scoliodon*

491. Which of the following is a non- poisonous snake?
a. Pythun b. Cobra c. Krait d. Viper

492. Chondrichthyes can be differentiated from osteochthyes externally by:
a. naked gills b. heterocercal tail
c. ventral mouth d. all the above

493. Mammals are characterized by:
a. Hair on the body b. mammary glands
c. external pinnae d. all the above

494. In amphibians
a. Exoskeleton is absent b. skin is respiratory
c. both a & b d. none of the above

495. Amniota includes:
a. fishes,reptiles& mammals b. amphibians, birds & reptiles
c. birds, reptiles & mammals d. amphibians, reptiles & mammals

496. Which one of the following is poikilothermal?
a. whale b. echidna c. tortoise d. fowl

497. Pneumatic skeleton is found in:
a. amphibians b. reptiles c. birds d. mammals

498. Fish characteristic is :
a. Dermal scales b. Epidermal scales
c. Lateral line organs d. both a & b

500. *Petromyzon* belongs to class:
a. Osteichthyes b. Chondrichthyes

c. Cyclostomata d. Amphibia

501. In mammals diaphragm makes a partition between
a. lungs & stomach
b. stomach & heart
c. thoracic & abdominal cavity
d. lungs & heart

502. A fish which produces electric current is:
a. *Trygon* *b. Torpedo* *c. Pristis* d all the above

503. Mammals have evolved from:
a. birds b. reptiles c. amphibians d. nono of the above

504. Sharks are:
a. Ovoviviparous b. viviparous
c. oviparous d. none of the above

505. Sea horse is:
a. Coelenterate b. Bony fish
c. Mammal d. Reptile

506. Lateral line organs occur in:
a. Fishes
b. Fishes & amphibian larvae
c. Cartilagenous fishes & amphibian larvae
d. Fishes & larvae of other vertebrates

507. An amphibian having gills in adult's stage is:
a. Salamander
b. Aquatic frogs
c. Limbless amphibian
d. Newt

508. *Hyla* is a:
a. Tree frog b. Mud puppy
c. Salamander d. Blind worm

509. The study of Lizards is:
a. Herpetology b. Saurology
c. Nidology d. Ichthyology

510. The study of reptiles is:
a. Rhinology b. Herpetology
c. Nidology d. Ichthyology

511. Tympanum or eardrum occurs in:
a. Bony fishes b. cartilaginous fish
c. Necturus d. None of the above

512. A snake possesses:
a. No eye lids
b. Movable lids
c. Immovable eye lids
d. Only nictitating membrane

513. The tympanum is absent in:
a. Dog fish b. Cat fish
c. Bony fish d. All the fishes

514. A homocercal tail is found in:
a. Telosts b. Sharks
c. Rays d. Lung fishes

515. Placoid scales are found in:
a. Cartilagenous b. Bony fish
c. Lung fish d. None of the above

516. Paired fins of fish are:
a. Caudal & Ventral b. Dorsal & Ventral
c. Pectoral & Pelvic d. Caudal & Pectoral

517. Bony/teleost fishes are characterized by:
a. Cloaca b. Air bladder
c. Placoid scales d. Ventral mouth

518. Persistence of larval stage is called:
a. Neogenesis b. Paedogenesis
c. Paedomorphosis d. Parthenogenesis

519. Male frogs can croak louder than females because of:
a. Larger size b. Being strong
c. Large sound box d. Vocalsacs

520. Summar sleep of cold blooded canimals is:
a. Hibarnation b. Neoteny
c. Aestivation d. Paedogenesis

521. Which of the following reptiles has four chambered heart?
a. Turtile b. Crocodile
c. Sphenodon d. King cobra

522. All reptiles are:
a. Poikilothermal & amniotic b. Homiothermal & amniotic
c. Poikilothermal & anamniotic d. Homiothermal & anamniotic

523. The largest lizard is?

a. *Varanus* b. *Heloderma*
c. *Ophisaurus* d. *Chameleon*

524. In amphibian, the heart has:
a. 2 auricles & 2 ventricles
b. 2 auricles & 1 ventricle
c 1 auricle & 2 ventricles
d. 1 auricle & 1 ventricle & 1- sinus verosus

525. Which one of the birds is Viviparous?
a. Ostrich b. Penguin
c. Albatross d. None of the above

526. Which of the following can fly backwards?
a. Penguin b. Albatross
c. Humming bird d. Elephant bird

527. Birds do not possess:
a. Teeth b. Urinary bladder
c. Gall bladder d. All of t he above

528. The skull of birds is:
a. Monocondylic b. Dicondylic
c. Amphicondylic d. None of the above

529. Mammal which never drinks water is:
a. Kangaroo b. Shrew
c. Kangaroo/Desert Rat d. Hedgehog

530. A trait found in all mammals is:
a. 7 cervical vertebrae b. Placenta
c. Hair d. All of the above

531. Rodents have
a. Hooves b. Long spines
c. Long incisors d. Long canines

532. Mammary glands are modified:
a. Salivary glands b. Lacrimal glands
c. Sweat glands d. Sebaceous glands

533. Milk glands occur in:
a. All prototherians b. Metatherians
c. Eutherains d. All mammals

534. A mammalian trait is:
a. Diaphragm b. 4 – chambered heart
c. Thecodont dentition d. Vivipary

535. Wish bone of birds is from:
a. Pelvic guidle b. Skull
c. Hind limbs d. Pectoral girdle/clavicle

536. Snakes do not have
a. Girdles b. Eye lids
c. Limbs d. All the above

537. Poisonous fangs of snake are modified:
a. Canines b. Nasals
c. Mandible d. Maxillary teeth

538. Salamander is a member of:
a. Aves b. Amphibia
c. Mammalia d. Reptilia

539. Which is Viviparous?
a. Bony fish b. Shark
c. Lung fish d. Frog

540. Which one is a fish?
a. See horse b. Sea cow
c. Sea cucumber d. Sea urchin

541. Frog belongs to the order:
a. Apoda b. Anura
c. Urodela d. Caudata

542. Renal portal system is absent in:
a. Amphibians b. Reptiles
c. Birds d. Both a and b

543. Dinosaurs became extinct in:
a. Permian b. Jurassic
c. Triassic d. Cretaceous

544. During winter, frog undergoes:
a. aestivation b. motivation
c. sexual intercourse d. hibernation

545. Unicellular green alga is:
a. *Ulothrix* b. *Spirogyara*
c. *Chlamydomonas* d. All of the above

546. *Chlamydomonas* is:
a. Eukaryotic b. Prokaryotic
c. Both and b d. None of the above

547. Unit of sexual reproduction is:

a. Zoospore b. Aplanospore
c. Akinete d. Gamete

548. Life cycle in spirogyra is:
a. Diplontic b.Diplohaplontic
c. Haplontic d. None of the above

549. In addition to reproduction, zygospore also helps in:
a.perennation b.dispersal
c. genetic variability d. all of the above

550. *Spirogyra* filaments increase in length due to division in:
a. Basal cells b. Rhizoidal cell
c. Every green cell d. apical cell

551. *Spirogyra* is found in:
a. Running fresh water b. stagnant salt water
c. stagnant fresh waterd. d. None

552. *Spirogyra* is called pond silk because
a. filaments are made up of silk
b. filament are slippery to touch
b. both a and b
d. None o f the above

553. *Spirogyra* has chloroplast with shape:
a. Ribbon like and spiral b. Cup shaped
c.stellate d. Spiral

554. Maximum number of chloroplast on a single cell of *spirogyra* is:
a. Rhodophycea b.Cyanophyceae
c. Xanthophyceae d. Chlorophycea

556.. The asexual reproduction in S*pirogyra* is generally carried out by:
a. Fragmentation b. Akinetes and aplanospores
c. Hypnospores and palmella stage d. All of the above

555.. *Spirogyra* belongs to class:
a. *Rhodophycea* *b. Cynanophyceae*
c. Xanthophyceae *d. Chlorophyceae*

557. The nucleus of S*pirogyra* cell lies:
a. Suspended in central vacuole
b. Embedded in cytoplasm
c. Just near the cell membrane
d. In contact with the chloroplast

558. The fusing gametes of S*pirogyra* are:
a. morphologically similar and physiologically dissimilar
b. Morphologically as well as physiologically similar
c. Morphologically dissimilar but physiologically similar
d. Morphologically as well as physiologically dissimilar

559. Scalariform conjugation of *Spirogyra* occurs in:
a. Monoecious species b. Dioecious species
c. usually dioecious species of sometimes and monoecius species
d. equally frequent in monoecious and dioecious species

560. Mode of sexual reproduction in S*pirogyra* is:
a. Isogamous b. Anisogamous
c. Heterogamous d. Oogamous

561. Fusion of dissimilar gametes is:
a. Autogamy b. Isogamy
c. Allogamy d. Dichogamy

562. In Scalariform conjugation of S*pirogyra*, the fusing gametes are derived from:
a. Same filament
b. 2 different filaments
c. Both a and b
d. Only one filament is involved in the process

563. The male gamete in *Spirogyra* is:
a. Motile but aflagellate b. Motile and flagellate
c. Non motile and flagellate d. Multinucleate

564. Which of the following is not correct about S*pirogyra* :
a. Each cell of the filament is vegetative as well as reproductive
b. It is a gametophyte
c. The zoospores are produced during sexual reproduction
d. Sexual reproduction in physiological angiosperms

565. The zygospore of *Spirogyra* produces:
a. four meiospores
b. a single filament
c. four filaments
d. a large number of spores each of which produces a filament.

566.The most common mode of reproduction in *Spirogyra* is:
a. conjugation b. aplanospore formation
c. fragmentation d. all of the above

567. Number of gametes produced by a single cell in *Spirogyra* is:

a. Four b. Two
c. Many d. one

568. Zygote in *Spirogyra* is initially:
a. Biflagellate b. Non flagellate
c. Multi flagellate d. Quadriflagellate

569. Meiosis in *Spirogyra* occurs at the time of:
a. Zoospore formation b. Gamete formation
c. Akinete formation d. Germination of zygospore

570. Moss plant is:
a. Gametophytic b. Sporophytic
c. Sometimes gametophytic some times saprophytic d.none

571. Plant body of *Spirogyra* is:
a. Diploid b. Haploid
c. Triploid d. Polyploid

572. Which one helps in spore dispersal in Moss?
a. Columella b. Operculum
c. Peristome teeth d. Anophysis

573. Reproduction is *Spirogyra* is mostly by:
a. conjugation b. asexual
c. both a and b d. none of the above

574. Plant body is thallus in:
a. Gymnosperms b. Algae
c. Bryophyta d. Pteridophyta

575. Zygotic meiosis occurs in:
a. Thallophyta b. Pteridophyta
c. Gymnosperms d. Angiosperms

576. Fern spermatozoids possess flagella:
a. Nil b. one
c. two d. numerous

578. Ladder like structure in *Spirogyra* represents:
a. lateral conjugation b. scalariform conjugation
c. direct conjugation d. a sexual reproduction

579. Find out the similarity between gymnosperms and angiosperms:
a. naked ovules b. poly embryony
c. Double fertilization d. none of the above

580. Archegonium is absent on:
a. Bryophyte b. Pteridophyte
c. Thallophyte d. Gymnosperms

581. Phycology deals with the study of:
a. Algae b. Fungi
c. Microbes d. Bryophytes

582. Seive tubes and companion cells are absent in:
a. Angiosperms b. Pea
c. Mango d. Pteridophyta

583. Gymnosperms are characterized by:
a. Multiflagellagte sperms b. Naked seeds
c. Winged seeds d. Seeds inside fruits

584. Ribbon shaped chloroplasts occurs in:
a. *Chlamydomonas* *b. Spirogyra*
c. Ulothrix *d. Riccia*

585. Naked seeds occur in:
a. *Pteris* *b. Cycas*
c. Funaria *d. Selaginella*

586. Angiosperms contain:
a. tracheids b. vessels
c. Both a and b d. none of the above

587. Which are the amphibians of the plant kingdom?
a. Tracheophyta b. Bryophyta
c. Pteridophyta d. Thallophyta

588. Which one is a living fossil?
a. *Pinus* *b. Gnetum*
c. Gingko *d. Riccia*

589. Double fertilization is characteristic of:
a. Pteridophytes b. Gymnosperms
c. Bryophytes d. Angiosperms

590. Antheridia and archegonia are sex organs of:
a. *Spirogyra* *b. Mucor*
c. Moss *d. Puccinia*

591. Vascular bundles are absent in:
a. Gymnosperms b. Angiosperms
c. Pteridophytes d. None

592. In gymnosperms, the ovules are:
a. naked b. covered
c. with two coats d. all of the above

593. Fern prothallus is :
a. Rhizoid b. Protonema
c. Sporophyte d. Gametophyte
594. Plant group in which every cellof gametongium forms gametes is:
a. thallophyta b. Bryophyta
c. Pteridophyta d. Gymnosperms
595. After resting, *Spirogyra* spores are:
a. Diploid b. Haploid
c. Zygospores d. Aplanospores
596. Cell wall of *Spirogyra* possesses:
a. Cellulose b. Lignin
c. Chitin d. Suberin
597. Seed habit originated in certain:
a. Bryophytes b. Gymnosperms
c. Ferns d. Angiosperms
598. Gymnosperm seeds are naked due to lack of:
a. Pericarp b. Perianth
c. Nucellus d. Integuments
599. Formation of embryo without gametic union is:
a. Apogamy b. Apospory
c. Isogamy d. Syngamy
600. What is unique about bryophytes?
a. they do not have roots
b. bryophytes produce spores
c. they lack vascular tissues
d. sporophyte remains attached to gametophyte
601. Common between bryophytes and pteridophytes is:
a. absence of sporophyte
b. gametophyte dependent on sporophyte
c. sporophyte dependent on gametophyte
d. multicellular sex organs with sterile jacket
602. Sperm of fern enters on archegonium due to:
a. Chemotaxy b. Phototaxy
c.Thermotaxy d. Cyclosis
603. Tracheophyta consists of:
a. bryophytes
b. pteridophytes
c. gymnosperms and angiosperms
d. pteridophytes, gymnosperms and angiosperms
604. Gymnosperms have a mode of pollination called:
a. Zoophily b. Anemophily
c. Entomophilly d. Hydrophily
605. Walking fern is named so because:
a. it knows walking
b. it is dispersed through walking
c. its spores are able to walk
d. its spreads and propagates vegetatively by its leaf tips
606. Physiological anisogamous sexual reproduction occurs in:
a. *Spirogyra* *b. Mucor*
c. Selaginella *d. Pinus*
607. Fern prothallus develops from:
a. Oospore b. Antherozoid
c. Elater d. Spore
608. Dichotomous branching occurs in:
a. Liverworts b. Funaria
c. *Dryopteris* d. Pinus
609. Gametophytic generation is dominant in:
a. Pteridophytes b. Gymnosperms
c. Bryophytes d. Angiosperms
610. To which group would a plant belong that produces spores has vascular tissues and bears seeds without fruits:
a. Pteridophytes b. Gymnosperms
c. Bryophytes d. Angiosperms
611. Sexual reproduction of *Spirogyra* involves fusion of:
a. one motile gamete and one nonmotile gamete
b. two non motile gametes
c. two similar motile gametes
d. two dissimilar motile gametes
612. A tree fern is:
a. Adiantum *b. Dryopteris*
c. Asplenium *d. Cyathaea*
613. The algae yielding agar agar is:
a. *Geldium* *b. Rhodmenia*
c. Batrachospermum *d. Harveyella*

614. Main plant of *Funaria* is belongs to phase:
a. Polypoid b Diploid
c. Triploid d. Haploid
615. Sporogonium of *Funaria* is dependent on gametophyte:
a. Fully b. For food only
c.Partially for water and minerals d. None of the above
616. The moss plants are characterized by:
a. presence of stem of leaves b. absence of vascular tissue
c. a filamentous juvenile gametophyte d. all of the above
617. The stem and leaves in *Funaria* are not real because:
a.they are a part of gametophytic generation
b. they lack xylem and phloem
c. Both a and b
d. Neither of the two
618. Knobbed paraphyses are found in:
a. Archegonia of *Funaria* b. Antheridia of *Funaria*
c. Antheridia as well as archegonia d. Neither of them
619. The juvenile stage of the gametophyte of moss is:
a. Green, filamentous and branched structure called protonema
b. Dorsoventrally flattened plate like body
c. A tetraflagellate body
d. A colourless moss of tubular structure
620. First land inhabiting plants are:
a. Pteridophytes b. Bryophytes
c. Gymnosperms d. Angiosperms
621. The rhizoids in *Funaria* are:
a. Green and branched thread like structures
b. unbranched root like outgrowths
c. Branched and multicellular non green thread like structures
d. Unicellular and of 2 types
622. Female sex organs in *Funaria* are:
a. Antheridia b. Archegonia
c. Oospore d. Paraphyses
623. Apart from fixation and water absorption, the rhizoids of *Funaria* help in:
a. Perennation b. Dispersal
c. Storage d. Vegetative reproduction
624. In which of the following plants gametophytic phase is dominant:
a. Fern b. Moss
c. Angiosperm d. *Cycas*
625. The stem and leaves of *Funaria* are:
a. Analogous to those of angiosperms
b. Homologous to those of angiosperms
c. Not comparable to angisperms
d. None of the above
626. The product of fertilization in *Funaria* is:
a. Zygote b. Zygospore
c. Oospore d. Oosphere
627. The main body of a bryophytic plant is always:
a. Gametophytic b. Lichen
c. Sporophytic d. Hormogonium
628. Sporophyte of Funaria is:
a.Autotrophic
b. Saprophytic
c. Grows as a semi parasite on the gametophyte
d. Is total parasite on gametophyte
629. The sporophyte of *Funaria* is termed:
a. Sporangium b. Sporogonium
c. Sporozoite d. None of the above
630. The portion of Sporogonium of *Funaria* which anchors it into the gametophyte and absorbs food is:
a. Foot b. Seta
c. Operculum d. Apophysis
631. Archegonium of *Funaria* has neck canal cells:
a. 4 b. 6 – 10
c. One d. One binucleate
632. Vascular cryptogams are:
a. Bryophytes b. Spermatophytes
c. Pteridophytes d. None of the above
633. In pteridophytes, meosis occurs when:
a. spores are formed b. Prothallium is formed
c. Gametes are formed d. Sex organs are formed
634. Prothallus represents:
a. Gametophytic phase in pteridophytes

b. Sporophyte phase of pteridophytes
c. Sporophytic phase in Gymnospems
d. Sporophytic phase in Angiosperms

635. A living fossil is:
a. Pinus *b. Ephedra*
c. Cedrus *d. Cycas*

636. Life cycle of moss/fern is:
a.Diplontic b. Haplo Diplontic
c. Haplontic d. Diplo halpontic

637. Fern develops from moss in:
a. an independent gametophyte b. an independent sporophyte
c. swimming antherozoids d. Archegonia

638. Brown coloration of Phaeophycea is due to excess:
a. Fucoxanthin b. Zeaxanthin
c. Phycoerythrin d. Lycopene

639. Naked seeds are present in:
a. Angiosperms b. Gymnosperms
c. Spermatophyta d. None of the above

640. Xylem in Gymnosperms lacks:
a. Tracheids b. Xylem Parenchyma
c. Xylem fibres d. Vessels

641. Example of the plant which bears seed but no fruit is:
a. Mango b. *Selaginella*
c. *Pinus* d. Wheat

642. Green algae belong to the phylum:
a. Charophyta b. Phaecophyta
c. Chlorophyta d. Chrysophyta

643. Olants having (spires), Xylem & Phloem but lacking seeds are:
a. Bryophytes b. Gymnnosperms
c. Pteridophytes d. Angiosperms

644. In Pteridophytes, meiosis occurs at the time of:
a. Gamete formation b. Spore formation
c. Formation of prothallus d. Formation of sex organs

645. Which one is absent in fern rhizome?
a. vessels b. sieve cells
c. phloem parenchyma d. Tracheids

646. In a fern sporangium , the number of spores is:
a. 64 b. 32 c. 128 d. 16

647. Venation in fern is:
a. Parallel b. Reticulated
c. Closed dichotomous d. Open furcated

648. Placenta in *Dryopteris* is the place of attachment of:
a. Ovules b. Ramenta
c. Sporangia d. Archegonia

649. In *Dryopteris*, the sori are borne:
a. Laterally b. Abanially
c. Adanially d. Marginally

650. Bryophytes have great
a. Ecological importance b. Economic importance
c. Aesthetic valve d. Medicinal valve

651. Botanical snakes are:
a. Algae b. Fungi
c. Bryophytes d. Pteridophytes

652. Sex organs present on the ventral surface of fern prothallus & intermingled with rhizoids are:
a. Antheridia b.Archegonia c.Sori d. Marsilea

653. Which is a walking fern?
a. *Adiantum* *b. Pteridium* *c. Pteris* *d. Marsilea*

654. In fern sporangia develop in leaves known as:
a. Microphyll b.Foliophyll c.sporophyll d. none

655.Thread like filaments which form the plant body of fungiare:
a. Rhizoids b. Paraphyses c. Hyphae d. Haptera

656. The cell wall of yeast is composed of:
a. cellulose b. pectose c. pectine d. chitin & mannan

657. In yeast the sexual reproduction is by conjugation. After fusion the Zygotic nucleus divides meiotically & forms haploid spores.The unicellular structure with haploid spores is:
a. Sporangium b. Gametangium
c. Ascus d. Zoosporangium

658. Yeast cell divides by:
a. mitosis only b. mitosis & Amitosis
c. Endomitosis & Amitosis d. Mitosis & Endomitosis

659. Yeasts are economically important because they:
a. spread plant diseases

b. spread animal disease
c. are used in tea & tobacco industry
d. Are used in wine & baking industry

660. Yeast differs from *Rhizopus* in being;
a. multicellular & coenocytic b. unicellular & uninucleate
c. unicellular & coenocytic d. filamentous

661.When a moist bread is kept exposed in the air, it becomes mouldy & black because:
a. spores are present in the water
b. spores sre present in the bread
c. spores are present in the bread
d. the bread decomposes

662. Yeast is abundantly found in:
a. moist bread
b. horse dung
c. organic substances rich in fats
d. organic substances rich in sugar

663. The edible fungi are
a. rusts b. moulds c. mildews d. mushrooms

664. Mushrooms belong to the kingdom:
a. Plantae b. Animalia c. Protista d. Fungi

665. *Amanita,* a poisonous fungus is:
a. mushroom b. bracket fungus c. toadstool d. puffball

666. The important antibiotic wonder drug extracted from 'Penicillium'is:
a. Penicillin b. Aureomycin
c. Streptomycin d. Terramycin

667. Yeast is not used in the manufacture of:
a. Toddy b. Penincillin
c. Wine d. Baking breads

668. Fungal filament system is called mycelium. Pseudomycelium is formed in
a. *Synchytrium* *b. Rhizopus*
c. Yeast *d. Rhizopus* during spore germination

669. The bread becomes porous & soft when the yeast cells are mixed in the lump of dough of wheat flour, because:
a. Yeast is soft & flour also becomes soft.
b. Yeast produces acetic acid & alcohol which makes the bread soft
c. Release of CO_2 makes it soft.
d. Yeast produces benzoic acid.

670. Which of the following is not a fungus?
a. Sargassum *b. Mucor*
c. Agaricus *d. Morchella*

671. Facultative saprophyte is :
a. Parasite but can be saprophyte
b. Always parasite
c. Always saprophyte
d. saprophyte but acquires a parasitic mode

672. A facultative parasite is one which?
a. Always requires a living host
b. is normally a saprophyte but can also be a parasite
c. is normally a parasite but can also be a saprophyte
d. Always requires dead organic matter

673. Which is edible fungus?
a. *Rhizopus* *b. Penicillium*
c. Mucor *d. Agaricus*

674. Asci are found in:
a. *Ascobolus* *b. Saccharomyces*
c. *Penicillium* d. all the above

675. Lichens are organisms:
a. Algae b. Fungal
c. Composite d. Protistan

676. The feeding structure of the fungus is the:
a. Mycelium b. Rhizomorph
c. Sclerotium d. Penicillus

677. *Agaricus* is a member of:
a. Ascomycetes b. Deuteromycetes
c. Basidiomycetes d. Phycomycetes

678. Zygospore of *Mucor* germinates to form:
a. Mycelium b. Promycelium
c. Hyphae d. Germ tube

679. Pin Mold or *Mucor* reproduces itself by means of:
a. Buds b. Fragmentation
c. Autogamy d. Spores

680. Organisms which obtain their food from non-living material environment are called:
a. Autotrophs b. Epiphytes
c. Autogamy d. Spores

681. Vegetative reproduction in yeast takes place by:
a. Akinetes b. Aplanospores
c. Ascospores d. budding

682. One of the common fungal diseases of man is:
a. Cholera b. Plague
c. Typhoid d. Ringworm

683. To digest the food that lies in external medium, saprophyte secretes:
a. Enzymes b. Hormones
c. Sugar d. Vitamin A

684. Yeast is an important source of:
a. Vitamin C b. Riboflavin
c. Sugars d. Vitamin A

685. Plectenchyma is a tissue composed of:
a. Parenchyma b. Collenchyma
c. Mycelial thread of fungi d. Tracheids in higher plants

686. Reproduction of *Mucor* takes place by:
a. Isogamates b. Arisogametes
c. Agametes d. none of the above

687. Fungal hyphae penetrate hard cell walls of their hosts with the help of:
a. Enzymes b. Hormones
c. Sharp tips d. Sugar enudates

688. Sac fungi are :
a. Ascomycetes b. Basidiomycetes
c. Ohycomycetes d. Zygomycetes

689. All the conditions are required for the growth of *Mucor* oxcept:
a. warm b. light
c. carbohydrates d. water

690. Aflatoxin is produced by:
a. virus b. Bacteria c. fungus d. nematode

691. Fungal cellwall is composed of:
a. Chitin b. chitin or cellulose
c. hemicellulose d. cellulose

692. When 2 host species are required for completion of parasitic fungus life cycle, the Condition is described as:
a. autoecious b. heteroecious
c. autotrophic d. heterokaryotic

693. Mushroom is a:
a. saprophyte b. photosynthesizer of food material
c. facultative d. facultative

694. Lichens show:
a. comensalism b. mutualism
c. parasitism d. myorrhizal association

695. Fungi are always
a. autotrops b. heterotrops
c.saprophytes d. parasites

696. Oomycetes is the alternative name for:
a. zygomycetes b. phycomycetes
c. ascomycetes d. club fungi

697. Yeast is used in the production of :
a. ethyl alcohol b. acetic acid
c. cheese d. curd

698. Bread dough rises because of the action of :
a. heat b. kneading
c. bacteria d. yeast

699. The common method of reproduction in yeast is :
a. budding b. fragmentation
c. sexual reproduction d. fission

700. Club fungi are :
a. Oomycetes b. Deuteromycetes
c. zygomyetes d. bsaidiomycetes

701. Basidiospores are characteristic of:
a. bread mould b. mushrooms
c. aspergillus d. yeast

702. Conjugation fungi are:
a. domycetes b. zygomycetes
c. ascomycetes d. mushrooms

703. Fungi usually store the reserve food material in the form of :
a. starch b. glycogen and oil
c. lipid d. protein

704. Sexual reproduction is absent in :
a. phycomycetes b. ascomycetes
c. basidiomycetes d. deuteromycetes
705. Fungi can be distinguished from the algae by the fact that:
a. mitrochondria are absent
b. cell wall is cellulosic and chlorophyll is absent
c. nucleus is present
d. cell wall is chitinous and chlorophyll is absent
706. Fungal spores produced asexually at tops or sides of hyphae are called
a. zoospores b.spores
c. chlamydospore d. conidia
707. Part of the mushroom visible above ground is :
a. ascocarp b. ascogonium
c. basidium d. basidiocarp
708. Fungi producing usually 8 spores in a sac like structure belong to :
a. ascomycetes b. phycomycetes
c. deuteromycetes d. basidiomycetes
709. The asexual spores characteristics of ascomycetes are :
a. condidiosporangia b. conidia
c. sporangiospores d. smut sporse
710. Fungi lacking cross walls in the mycelium belong to :
a. ascomycetes b. phycomyetes
c. deuteromycetes d. baidiomycetes
711. Fungi imperecti is a group of Fungi which :
a. don't have a sexual phase
b. includes toadstool and puffball
c. have species that prey on some nematodes
d. all the above
712. A fungus is :
a. absorptive heterotroph b. ingestive heterotroph
c. parasitics heterotroph d. holozoic heterotroph
713. Lichens have an actual relationship of :
a. parasitism b. mutualism
c. helotism d. epiphytism
714. Yeast and penicillium are included under
a. basidionycetes b. zygomycetes
c. ascomycetes d. phycomycetes
715. Common form of food stored in fungal cells is :
a. starch b. sucrore
c. glucose d. glycogen
716. Lichens show symbiotic relationship between of:
a. fungus and roots of higher plants b. fungus and algae
c. two algae d. two fungi
717. Organisms which are indicators of so2 pollution are :
a. mosses b. lichens
c. mushrooms d. puffballs
718. All heterotrophs require an environment which can provide
a. Nitrates in solution b. Organic compounds
c. Ammonium salt d. Vitamin A
719. First antibiotic isolated was
a. Neomycin b. Terramycin
c. Streptomysin d. Penicilum
720. The hyphae of *Aspergillus* are
a. Aseptate & multinucleate b. Septate & multinucleate
c. Aseptate & uninucleate d. Septate & uninucleate
721. Mycorrhiza is a symbiotic relationship between:
a. Algae & Fungus
b. Algae & bryophytes
c. Algae & roots of gymnosperm
d. Fungi & roots of higher plants
722. Fungi differ from algae in being:
a. Coenocytic
b. Without motile gametes
c. Without unicellular forms
d. Without chlorophyll & possessing cells
723. Absorptive heterotrophic nutrition is exibited by:
a. Algae b. Fungi c. Bryophytes d. Pteridophytes
724. Thread like fungal structures are:
a. Hyphae b. Mycelium c. Rhizomorphs d. Sclerotia
725. Study of fungi is called:
a. Palynology b. Mycology
c. Phycology d. Microbiology
726. Bio-indicaters of pollution are:
a. Lichens b. Mosses

c. Mycorrchizal association d. Toadstools

727. Coenocytic Mycelium occurs in:
a. Deuteromycetes b. Ascomycetes
c. Phycomycetes d. Basidiomycetes

728. The enzyme responsible for fermentation in yeast is:
a. Aldolase b. Dehydrogenase
c. invertase d. Zymase

729. Which one is not a mode of reproduction in yeast?
a. Budding b. Plasmogamy
c. Oogamy d. Ascospore formation

730. Gills of mushroom take part in:
a. Respiration
b. enhancing buoyancy
c. Nutrition
d. bearing spores for reproduction

731. Mushroom is:
a. *Mucor* b. *Agaricus* c. Yeast d. *Pencillium*

732. Which type of life cycle occurs in *Mucor*?
a. Isomorphic b. Heteromorphic c. Haplontic d. Diplontic

733. Mycorrhiza represents:
a. Antagonism b. Endemism
c. Symbiosis d. Parasitism

734. Zygospores are produced in:
a. *Mucor* b. *Penicillium* *c. Pucinia* *d. Alternaria*

735. Common bread mould is:
a. Yeast b. *Rhizopus* *c. Clostridum* *d. Myxovirus*

736. The fungus without mycelium is:
a. *Rhizopus* *b. Saccharomyces* *c. Puccinia* *d. Phytophthora*

737. Yeast is:
a. Purely aerobic b. anaerobic
c. rarely anaerobic d. Both aerobic and anaerobic

738. In *Mucor*, isogamy occurs between:
a. (+) and (-) strains b. same strain
c. Aplanospores d. Zygospores

739. Cell was discovred by:
a. Swanson b. Leeuwenhoek
c. Robert Hook d. Robert Brown

740. Cell theory states that:
a. All cells are living
b. All cells have nucleus
c. Cells are fundamental structural units of living organisms
d. Cell reproduces by mitosis and meiosis

741. No cell is without
a. Chloroplast b. Mitochondria
c. Ribosomes d. Nucleus

742. Animal cells are without
a. Ribosomes b. Plastids c. Lysosomes d. Vacuoles

743. Plant cells are generally without:
a. Lysosomes b. Cell wall c. Plastids d. Vacuoles

744. True nucleus is absent in:
a. Bacteria b. Fungi c. Algae d. Lichens

745. Stucture present in both animal and plant cell is:
a. primary cell b. Secondary wall
c. Plasma membrane d. Plastids

746.The smallest animal cell is egg of:
a. Ostrich b. Human female c. Duck d. Hen

747. An undifferentiated fibrillar nuclear structure is present in the cell of:
a. Prokaryote b. Higher animals
c. Virus d. Eukaryote

748. Largest animal cell is that of:
a. Ostrich b. Duck
c. Human d. Hen

749. Human eggs is larger than human sperm because it has:
a. larger nucleus b. More membranes
c. More cytoplasm d. All the above

750. The largest cell in the human body is:
a. liver cell b. muscle cell
c. Neuroglia cell d. nerve cell

751. Who applied cell theory to plants?
a. Schwann b. Schleiden
c. Swanson d. Jenssen

752. Animal cell differs from plant in not having
a. cell wall b. glyoxisomes
c. Plastids d. All the above

753. Nuclear envelope is absent in
a. Eukaryotic cell b. Bacteria
c. Both eukaryotic & bacterial cell d. none of the above
754. Nucleiod is present in :
a. Prokaryotes b. Protozoa
c. green algae d. none of the above
755. Cells observed by Robert Hooke were actually
a. cellwall b. nucleus c. protoplasm d. nucleolus
756. Large sized organisms usually have:
a. large sized cell b. more non-cellular material
c. higher number of cells d. more cellular excretions
757. Extrinsic information molecules are:
a. RNAs b. mRNAs c. hormones d. enzymes
758. Cell which lacks nucleus will also lack:
a. Ribosomes b. Polyribosome
c. Chromosome d. Lysosome
759. Cell organelles found only in plants are:
a. Golgi complex b. Mitochondria
c. Plastids d. Ribosomes
760. Which one is a prokaryote?
a. green algae b. Bacteriophage
c. *Salmonella* d. *Agaricus*
761. Which is characteristic of prokaryote?
a. Absence of nuclear envelope
b. Absence of membrane bound organelles
c .Absence of nucleolus
d. all the above
762. An example of cell devoid of nucler membrane & mitochondria is:
a.Sperm b. Protist
c. Bacterial cell d. Sponge cell
763. A prokaryotic cell lacks:
a. cell wall b. cell membrane
c. cytoplasm d. nucleolus
764. Prokaryotic genetic system has:
a. Neither DNA nor histones
b. Both DNA & histones
c. DNA but no histones
d. Either DNA or histones
765. Main difference between plant & animal cells is:
a. Animal cell has large vacuoles
b. Plant cell has small vacuoles
c. Animal cell lacks rigid cell wall
d . Plant cell lacks rigid cell wall
766. Nucleus was discovered by:
a. Robert Brown b. Leeuwennock
c. Robert Hooke d. Schleiden & Schwann
767. Physical basis of life is:
a. cell b. nucleus
c. DNA d. Protoplasm
768. Smaller cell is:
a. Less active metabolically
b. with a smaller nucleus
c. With a larger nucleus
d. More active metabolically
769. Minimum cell size seen under light microscope is:
a. 1 μ m b. 0.14 μ m
c. 0.25 μ m d. 0.5 μ m
770. Mitochondria do not occur in:
a. Bacteria b. Brown algae
c. Green algae d. Red algae
771. An exception to cell theory is:
a. Mycoplasma b. Virus
c. Protistans d. Algae
772. Animal cell differs from plant cell in possessing:
a. Golgi body b. Vacuole
c. Plastid d. Centrosome
773. Cellular totipotency means:
a. Synthesis of new cells
b. Formation of new species
c. Formation of new plants
d. Capability of a plant cell to form a complete plant
774. Intracellular compartments don’t occur in:
a. Prokaryotes b. Eukaryotes c. Lower plants d. higher plants
775. Prokaryotic ribosomes are:

a. 30s b. 50s c. 70s d. 80s

776. The suffix ‘s’ in ribosome unit indicates:
a. Sedimentation co-efficient b. Solubility
c. Surface area d. Size

777. Prokaryote is characterized by:
a. Absence of nucleolus
b. Absence of nuclear envelope
c. Dispersed DNA & lack of membrane bound organelles
d. All of the above

778. Longest cells in human body are:
a. Nerve cells b. Bone cells
c. Leg muscles cells d. Heart muscle cells

779. The most important carbohydrate monomer is:
a. Protein b. Nucleic acid c. Carbohydrates d. Water

780. The most important carbohydrate monomer is:
a. Maltose b. lactose c. Glucose d. Gulactose

781. All organic substances possess:
a. C, H & O_2 b. C, O_2, & N_2 c. C & H_2 d. C, H_2, O_2 & N_2

782. Simplest form of Carbohydrate is:
a. Carbon b. Starch
c. Monosaccharide d. Cane sugar

783. A Monosaccharide is:
a. Lactose b. Sucrose c. Ribose d. Maltose

784. The sweetest sugar is:
a. Fructose b. Saccharin b. Trehalose d. Monellin

785. The sugar present in milk is:
a. Casein b. maltose c. Lactose d. Heparin

786. Which one yields twice as many calories as carbohydrate for the same weight?
a. Protein b. Fat c. Amino acids d. Vitamins

787. Immediate source of cellular energy is:
a. Glucose b. ATP c. Pyruvic acid d. NADH

788. Substance forming 80% of cytoplasm in plant cells is:
a. Proteins b. Water c. Fats d. Minerals

789. Most of the water found in the young cell occurs in:
a. Cell wall b. Nucleus c. Cytoplasm d. Vacuoles

790. A disaccharide that gives 2 molecules of glucose on hydrolysis is:
a. Sucrose b. Glucose c. Fat d. Starch

791. Immediate source of energy is:
a. Sucrose b. Glucose c. Lactose d. Both b & c

792. The principal energy storing molecule is:
a. NADP b. FAD c. ATP d. ADP

793. A source of maximum energy is:
a. Carbohydrate b. Fat c. Protein d. Vitamins

794. Adenine is:
a. Purine b. Pyrimidine c. Nucleoside d. Nucleotide

795. Which one is a carbohydrate?
a. Glycerol b. maltose c. Sucrose d. All of the above

796. Chemical used most by plants is:
a. CO_2 b. O_2 c. Cytochrome d. N_2

797. A Nucleotide is formed of:
a. Purine, Pyrimidine & a phosphate
b. Purine, Sugar & phosphate
c. Nitrogen base, sugar & phosphate
d. Pyrimidine, sugar & phosphate

798. Pyrimidines of RNA are:
a. Adenine & cytosine b. Adenine & guanine
c. Thymine & cytosine d. Uracil & cytosine

799. Which is a component of chlorophyll?
a. Mg b. Mn c. Zn d. Fe

800. Blood clotting is helped by:
a. Na^+ b. K^+ c. Ca^{2+} d. Mg^{2+}

801. Nitrogen basses do not contain:
a. C b. P c. H_2 d. N_2

802. Framework elements in plants are:
a. N, Cu, Mg b. C, H, O c. Mg, Cu, Fe d. C, O, Cu

803. Which are purines?
a. Adenine & Guanine b. Adenine & Thymine
c. Cytosine & Thyamine d. Cytosine & Guanine

804. Which is a dinucleotide?
a. ADP b. RNA c. NAD d. DNA

805. A nucleotide that takes part in transfer of energy is:
a. Uracil b. Thymine c. ADP d. ATP

806. Which one is not a carbohydrate?

a. Chitin b. Glycogen c. Starch d. Methionine

807. Mineral associated with cytochrome is:
a. Cu b. Mg c. Fe & Mg d. Fe & Cu

808. Membrane permeability is controlled by:
a. Na^+ b. K^+ c. Both a & b d. Ca^{2+}

809. Water protects organisms from thermal shock due to its high:
a. Thermal conductivity b. Latent heat
c. Dielectric constant d. All of the above

810. Living cell contains 60%-70% water. Water present in human body is?
a. 60-65% b. 50-55% c. 75-80% d. 65-70%

811. Amino acids are produced from:
a. Proteins b. Fatty acids c. Essential oils d. L-Keto acids

812. Which one is a nucleotide?
a. Uridylic acid b. Thymidine
c. Cytosine d. Glutamic acid

813. A nucleotide is:
a. Sugar + phosphate b. Base+ Sugar + Phosphate
c. Base + Sugar –OH d. (Base + Sugar +Phosphate)n

814. Four elements making 99% of the living system are:
a. CHOS b. CHOP c. CHON d. CNOP

815. The most abundant element in living beings is:
a. O b. N c. C d. H

816. Which is not a lipid?
a. Wax b. Sterol c. Glycerol d. Lecithin

817. A nucleoside differs from nucleotide in not having
a. Sugar b. Nitrogen c. Phosphate d. Phosphate & Sugar

818. Maximum iron occurs in:
a. RBC b. WBC c. Bone cells d. Protein

819. Calcium is required for:
a. Muscle contraction b. Blood clotting
c. Bone formation d. All the above

820. Most common monosaccharides found in nucleus are:
a. Trioses b. Tetroses c. Pentoses d. Henoses

821. Amino acids not synthesized in our body are:
a. Nonessential b. Essential
c. Nonproteinaceous d. Deaminated

822. Lactose is made of:
a. Glucose + Fructose b. Glucose + Glucose
c. Glucose + Galactose d. Fructose + Fructose

823. Body with 3germlayers is called:
a. Tripoloblastic b. Diploblastic
c. Tetrablastic d. None of the above

824. Chordate consists of:…….classes.
a. 4 b. 3 c. 5 d. 6

825. The organisms provided with mammary glands are included in the class:
a. Amphibia b. Aves c. Mammalia d. Reptilia

826. Tenth vertebra of *Rana tigrina* is called:
a. Typical vertebra b. Atlas
c. Axis d. Urostyle

827. Respiration in frog takes place through:
a. Lungs b. Buccopharyngeal cavity
c. Skin d. All of the above

828. Heart of frog is:
a. 2 chambered b. 3 chambered c. 4 chambered d. 5 chambered

829. Pulmonary vein of frog carries:
a. Deoxygenated blood b. Impure blood
c. Oxygenated blood d. none of the above

830. Frog consists of_____pairs of cranial nerves.
a. 18 pairs b. 9 pairs
c. 10 pairs d. 12 pairs

831. Following structure is reduced or absent in frog;
a. External air b. Nictitating membrane
c. Tongue d. Tympanum

832.Spinal nerves in frog are:
a. 8 pairs b. 9 pairs c. 10 pairs d. 12 pairs

833. Frogs are:
a. Poikilothermal b. cold blooded
c. Ectothermal d. all of the above

834. Following part is absent in frog:
a. neck b. nictitating membrane c. web d. internal ear

835. Skull of the frog is:
a. Monocondylic b. Dicondylic
c. Tricondylic d. none of the above

836. Which of the following is absent in frog?
a. external air b. axis vertebra
c. tail d. all of the above
837. Glenoid cavity is present in:
a. skull b. pectoral girdle c. pelvic girdle d. radio-ulna
838. Following part is absent in frog:
a. Acrodont b. Homodont c. Polyphydont d. Thecodont
839. Respiratory mechanism found in frog is:
a. Pulmonary b. Cutaneous
c. Bucco- pharyngeal d. all the above
840. The vein that removes blood from the liver:
a. Hepatic portal b. Hepatic
c. Renal d. Renal portal
841. The vein that removes blood from the small intestines is;
a. Hepatic portal b. Hepatic
c. Renal d. Renal portal
842. The nerves supplying the eyes are called:
a. Occulomotor b. Abducens c. Optical d. Auditory
843. Following is not a part of the eye of frog:
a. choroids b. sclera c. iris d. tympanum
844. Following part of the ear is absent in frog:
a. pinna b. middle ear c. internal ear d. otoliths
845. Nephron consists of following parts except;
a. Glomerulus b. Bowman's capsule
c. Tubules d. Carotid labyrinth
846. Bacteria are_____
a. unicellular b. bicellular
c. multicellular d. none of the above
847. Bacterial cells contain:
a. Ribosomes b. Golgi bodies
c. Mitochondria d. Nucleolus
848. Cell wall of bacterial cell is made up of:
a. glucosamine & muramic acid b. cellulose &pectin.
C.Hemicellulose & pectin d. none of the above
849. The flagellum of bacteria is:
a. single stranded b. double stranded
c. multi stranded d. triple stranded
850. The term bacteria was given by:
a. Lee u wenhoek b. Nageli
c. Pasteur d. Darwin
851. Chlorophyll presenting bacteria are :
a. Chlorophyll a & b. Cell
b. Chlorobium & bacterio chlorophyll
c. Chlorophyll a& caretenoids
d. none
852. Cell structure of *Nostoc* is :
a. Prokaryotic b. Eukaryotic
c. none d. multicellular
853. *Nostoc* is:
a. Red alga b.Green alga
c. blue – green alga d. none of the above
854. Some species of *Nostoc* are associated with:
a. marchantia b. funaria
c. anthoceros d. mirror
855. Which is not the pigment present in *Nostoc* cell?
a. C- phycocyanin b. allophycocyanin c. Xanthophyll d. none of the above
856. The coloured portion of protoplast in Nostoc is called:
a. Chromoplasm b. Centroplasm
c. Nucleoplasm d. cytoplasm
857. The study of developmental history of a species or a group of species is called:
a. Taxonomy b. Anatomy
c. Phylogeny d. Herpetology
858. Which system gives the best idea of classification?
a. Practical system b. Artificial system
c. Natural system d. all of the above
859. The term evolution in biology means:
a. fossils are old b. life began in sea
c. living things constantly change d. Mandescends from apes
860. Doctorine of evolution is concerned with:
a. special creation theory b. Gradual change
c. Biogenesis d. Abiogenesis
861. Analogouss organs are those which are:

a. structurally similar
b. functionally similar
c. structurally as well as functionally similar
d. normally non-functional

862. Which one is not a vestigal organ of man?
a. wisdom teeth b. muscles of ear pinna
c. vermiform appendix d. Ileum

863. Principle of use & disuse was given by:
a. Darwin b. Lamarck
c. Mendel d. Oparin

864. The process of evolution
a. is a continuous process
b. is a discontinuos process
c. was continuous in the beginning but discontinuous now
d. was discontinuous in the beginning but continuous now

865. Homogous structure have:
a. similar origin but similar or dissimilar functions
b. Dissimilar origin but similar functions
c. dissimilar origin & dissimilar function
d. none of the above

866. Which of the following is attributed to Lamarck?
a. Inheritance of acquired characters
b. Natural selection
c. Origin of species
d. Bio- chemical origin of life

867. Fossils are:
a. Fovea in the retina of the vertebrate eye
b. Remains of organisms present in the rocks
c. Fossa present in bones
d. Foramen through which nerve passes

868. The theory of evolution indicates that:
a. man evolved from monkey
b. monkeys evolved from man
c. man evolved from dinosaurs
d. man & apes have common ancestors

869. Which of the following organs have no evolutionary significance?
a. Analogous organs
b. Vestigeal organs
c. Atavistic organs
d. Homologous organs

870. Symbiosis means:
a. Harmful relation between two organisms
b. A process advantageous to only one
c. Mutually beneficial partnership
d. none

871. Animals capable of digging are called:
a. Arboreal b. Cursorial
c. Fossorial d. Pelagic

872. In reflex action, the reflex arc is formed by:
a. Brain-spinal cord-muscles
b. Receptor-spinal cord-muscles
c. Muscles-receptor-brain
d. none of the above

873. Blood cells from blood are removed, liquid left is:
a. serum b. blood plasma
c. only water d. RBC & Hb

874. Antibodies are formed in :
a. Bone marrow b.Spleen
c. Lymphoid tissue d. liver

875. Antibodies fight against
a. Infection b. Hunger
c. Thirst d. Starvation

876. Clotting of blood inside blood vessel is prevented by:
a. Platelets b. Fibrinogen
c. Heparin d. Calcium

877. Cells in blood that fight against disease producing bacteria are:
a. WBC b. RBC
c. Platelets d. none of the above

878. Life span of RBC is:
a. 1 month b. 2 months
c. 3 months d. 4 months

879. RBC of mammals is:
a. anucleate b. binucleate
c. trinucleate d. mono nucleate

880. Ratio of RBC & WBC in blood is:
a. 100:1 b. 600:1 c. 1:600 d. 800:1
881. Membrane surrounding the heart is
a. peritoneum b. pleura
c. pericardium d. Meninges
882. Value present between left auricle & left ventricle
a. Bicuspid value b. Tricuspid value
c. aortic value d. pulmonary value
883. Value present between right auricle & right ventricle is
a. Bicuspid valve b. tricuspid valve
c. aortic valve d. pulmonary valve
884. For reaching the left side of heart blood must pass through
a. kidneys b. lungs c. Liver d. Brain
885. Blood from lungs 1st return to
a. Left ventricle b. left auricle
c. Right ventricle d. Right auricle
886. Metal associated with Hemoglobin is
a. Ca b. Fe c. Zn d. Cu
887. Normally the heart of a human adult beats for about
a. 60 times \minute b. 70 times / minute
c. 80 times / minute d. 90 times / minute
888. Hereditary disease condition in which blood fails to clot is
a. Anemia b. Hemophilia
c. Leukemia d. Hematuria
889. Smallest blood vessels are
a. Arteries b. capillaries
c. veins d. Venacavae
890. Arteries are blood vessels with
a. thick wall with valves b. thick wall without valves
c. thin wall with valves d. thin wall without valves
891. Blood pressure is measured by:
a. Stethoscope b. Sphygmomanometer
c. Electrocardiogram d. Electroencephalogram
892. In Mammals lachrymal glands are assonated with secretion of
a. Hormones b. Digestive juices
c. Enzymes d. tears
893. Rhodopsin (Visual pigment) of eye requires
a. Guava b. Mango c. carrot d. wheat
894. Pigment layer of eyes is known as
a. sclera b. choroid c. Retina d. cornea
895. The part of the eye which cuts like a diaphragm of a camera is
a. pupil b. lines c. lens d. cornea
896. Cavity of viterous humor in the eye is situated
a. Behind the lens b. in front of lens
c. behind the retina d. Between retina & sclera
897. In mammalian eye the power of accommodation is controlled by changing the shape of lens it is governed by
a. cornea b. pupil c. iris d. ciliary body
898. Cochlea of mammalian internal ear is concerned with
a. Hearing b. Balance of body posture
c. hearing & balance d. Perception of atmospheric pressure
899. The tympanic cavity is connected to the pharynx by
a.columella b. Ear ossicles
c. Eustachian tube d. Fallopian tube
900. The cones are located in
a. Iris b. cornea c. choroids d. Retina
901. Short – sightedness or myopic vision is corrected by
a. convex lens b. concave lens
c. convex mirror d. concave mirror
902. In mammalian eye, colour is perceived by
a. Rods b. cones
c. Both rods & cones d. cornea of the eye
903. Blind spot doesn`t contain
a. Rods b. Cones
c. Rods & cones d. Cornea of the eye
904. Taste buds for bitter taste are found
a. at the tip b. posterior part
c. lateral sides d. ventral sides
905. You are riding a bike and you take a sudden turn round the corner the organs involved in maintenance of balance is
a. Medulla oblongata b. semicircular canals
c. cerebrum d. cochlea
906. In vision light energy is converted into:
a. electrical energy b. Chemical energy

c. Mechanical energy d. Physical energy

907. The sequence of ear ossicles starting from ear drum is:
a. malleus, incus, stapes b. Stapes, Incus, Malleus
c. Stapes, malleus, incus d. Incus, malleus, stapes

908. Tactile (touch) receptors are maximum on:
a. body b. Limbs
c. face d. Head

909. 3 layers of eyeball from inside out are:
a. sclera, retina, choroid b. choroids, sclera, retina
c. sclera, choroid, retina d. retina, choroid, sclera

910. Master gland of the body is:
a. Adrenal gland b. Thyroid gland
c. Pituitary gland d. Thyroid gland

911. Endocrine glands pour their secretion directly into:
a. Ducts b. blood
c. lymph d. Tissues

912. Growth hormone is produced in:
a. Hypothalamus b. Pituitary gland
c. Thyroid gland d. None

913. Which one is the integration system in our body?
a. Blood vascular system
b. Nervous system and endocrine gland
c. Endocrine gland
d. Nervous system

914. In mammals, metabolic rate is controlled by:
a. Pancreas b. Thyroid
c. Liver d. pituitary

915. Hormone controlling the calcium level is:
a. Thyroxine b. Parathormone
c. Oestrogen d. Progestorone

916. Which gland is used for the “fright and flight reaction”?
a. Thyroid b. Parathyroid
c. Pitutary gland d. Adrenal

917. Ecosystem must need:
a. energy b. water
c. oxygen d. nitrogen

918. *Synecology* is the study of:
a. community in relation to environment b. individual
c. environment d. water

919. Who coined the term ‘ecosystem’?
a. Haeckel c. Reitter
c. Tansley d. Odum

920. If all the green plants of earth are destroyed:
a a. all pests willdie b. only herbivores will die
c. all animals ultimately die d. nothing will happen to animals

921. Trophic levels are formed by:
a. only plants b. only animals
c. only carnivores d. organism linked in food chain

922. If all the plants of the world die all animals will ultimately die because of lack of:
a.O2 b. food
c. CO2 d. fruits

923. In food chain, the saprophytic organisms are:
a. Producers b. consumers
c. predators d. decomposers

924. When the number of food chains is interlinked it is called:
a. food link b. food chain
c. food web d. ecological pyramid

925. When an organism is benefited without affecting, others the phenomenon is known as:
a. parasitism b. Commensalism
c. Predation d. mutualism

926. Some animals turn into parasities if they get an opportunity they are called:
a. Ectoparasities b. endoparasites
c. Faculative parasites d. obligatory parasities

927. Nuclear membrane disappears at:
a. Early prophase b. Late prophase
c. Meta phase d. Anaphase

928. The plant body of *Nostoc* is called
a. Hair b. Trichome
c. grass d. None

929. The main function of Heterocysts is:
a. Respiration b. Protection

c. N2 fixation d. water absorption

930. The trichome is surrounded by:
a. wood b. Mucilagenous sheath
c. spines d. hairs

931. Central colourless region in *Nostoc* cell is:
a. Cytoplasm b. chromoplasm
c. centroplasm d. protoplasm

932. The Ribosomes present in *Nostoc* are:
a. 70s b. 60s
c. 80s d. 90s

933. Phycobilisomes in *Nostoc* are found inside:
a. thylakoids b. chromophyll
c. chlorophyll d. cell wall

934. The DNA of *Nostoc* is:
a. double stranded and straight b. single stranded and coiled
c. double stranded and coiled d. single stranded and straight

935. Hormogonium is a method of:
a. a sexual reproduction in *Nostoc*
b. sexual reproduction in *Nostoc*
c. Vegetative reproduction in *Nostoc*
d. None of the above

936. Asexual reproduction in *Nostoc* takes place by:
a. endospore b. Akinete
c. both a and b d. None

937. Endospore formation in *Nostoc* occurs inside:
a. Vegetative cell b. Nucleus
c. Heterocyst d. None of the above

938. Prostrate hyphae are those which grow:
a. horizontally b. Aerially
c. aquatically d. None of the above

939. The hyphae present in *Mucor* are:
a. Prostrate hyphae b. Aerial hyphae
c. Rhizoidal hyphae d. All of the above

940. Which is the method of reproduction of *Mucor*?
a. Vegetative b. Asexual
c. Sexual d. All of the above

941. Asexual reproduction in *Mucor* takes place by formation of:
a. Sporangiospores b. Chlamydospores
c. Gemmae d. All of the above

942. Chemical nature of cellulose is:
a. Polypeptide b. Polysaccharide
c. Polynucleotide d. Disaccharide

943. Plant cell wall is mainly composed of:
a. Lipid b. Protein c. Chitin d. Cellulose

944. A protein molecule is made of:
a. Chain of amino acids b. Chain of fatty acids
c. Chain of polysaccharides d. Chain of Oligosaccharide

945. Cellulose is made up of repeated combination of molecules of:
a. Proteins b. Lipids
c. Glucose d. Fructose

946. DNA is a polymer of:
a. Proteins b. Carbohydrates
c. RNA d. Nucleotides

947. DNA differs from RNA in:
a. Nature of sugar alone b. Nature of purines alone
c. Nature of sugar & Pyrimidines d. All of the above

948. Which one is a Polysaccharide?
a. Starch b. Cellulose
c. Glycogen d. All of the above

949. Proteins can be denatured by:
a. CO_2 b. CO c. Heat d. O_2

950. DNA is directly involved in the synthesis except that of:
a. DNA b. Proteins c. tRNA d. mRNA

951. The joining of repeating small units to form complex macro molecule is called:
a. Polymerization b. Polymorphism
c. Aggregation d. Entropy

952. Protein is a:
a. Macromolecule b. Steroid
c. Fat d. Micromolecule

953. mRNA is a Polymer of:
a. Deonyribonucleosides b. Ribonucleosides
c. Ribonucleotides d. Deonyribonucleotides

954. A storage protein is:

a. Keratin b. Collagen
c. Haemglobin d. Glutellin/Globulin

955. Primary structure of protein is due to:
a. Hydrogen bonds b. Peptide bonds
c. –S-S linkages d. Ionic bonds

956. A fibrous polysaccharide is:
a. Glycogen b. Starch
c. Cellulose d. Collagen

957. A heteropolysaccharide is:
a. Glycogen b. Starch
c. Cellulose d. Chitin

958. The protein present in milk is:
a. Casein b. Glutelin
c. Myosin d. Globulin

959. DNA is unique in that it has
a. Nitrogen bases
b. Ability to withstand heat
c. Replication ability
d. replication & transmission ability

960. Quartenary structure is present in:
a. Haemoglobin b. Histone
c. Globulin d. Elastin

961. Proteins present in milk, egg & meat are:
a. Partially complete b. Complete
c. Incomplete d. Both b & c

962. A complete protein is the one which possesses:
a. All nonessential amino acids
b. All essential amino acids
c. All the 20 amino acids
d. All the amino acids with complete structure

963. Clover leaf shape structure is found in:
a. DNA b. RNA c. tRNA d. mRNA

964. Besides nucleus, DNA is also present in:
a. Mitochondria b. Lysosomes
c. Golgi apparatus d. Ribosomes

965. Basic unit of protein is:
a. Peptone b. Peptide
c. Aminoacid d. Amide

966. The most abundant protein is found in:
a. Chloroplasts b. Mitochondria
c. Liver d. Brain

967. In RNA, thymine is replaced by:
a. Adenine b. Guanine
c. Cytosine d. Uracil

968. The common feature amongst nucleus, chloroplast and mitochondria is:
a. Lamellae b. DNA
b. Cristae d. all of the above

969. The basic unit of nucleic acid is:
a. Pentose sugar b. Nucleoid
b. Nucleoside d. Nucleotide

970. Which is only found in RNA?
a. Gytosine b. Adenine
c. Uracil d. Guanine

971. DNA occurs in:
a. cytoplasm
b. Nucleus and some organelles
c. Cell organelles
d. Nucleus only

972. Which is distributed more widely in a cell?
a. DNA b. RNA
c. Chloroplast d. Sphaerosomes

973. Starch is a polymer of:
a. Fructose b. Glucose
c. Sucrose d. Maltose

974. Starch is a polymer of:
a. Pancreas b. Bone
c. Kidney d. Liver

975. Glycogen is related is:
a. Glucose b. Starch
c. Ribose sugar d. Lactose

976. In DNA, adenine pairs with:
a. Guanine b. Thymine
c. Cytosine d. Uracil

977. Distance between 2 strands of DNA is:
a. 34Ao b. 20Ao
c. 34Ao d. 340Ao
978. In double helix of DNA, the 2 DNA strands are:
a. coiled around a common axis b. coiled around each other
c. coiled differently d. coiled over protein sheath
979. In RNA, adenine will pair with:
a. Thymine b. Guanine
c. Uracil d. Cytosine
980. RNA does not possess:
a. Uracil b. Thymine
c. Adenine d. Cytosine
981. Most abundant RNA of the cell is:
a. tRNA b. rRNA
c. mRNA d. lRNA
982. Number of Nitrogen bases found in RNA are:
a. 2 b. 8
c. 6 d. 4
983. Purines of RNA are:
a. Guanine & adenine b. Uracil & thymine
c. Adinine & cytosine d. Uracil & guanine
984. Cutoplasmic DNA constitutes a total of:
a. 95-99% b. 45-50%
c. 65-70% d. 1-5%
985. Anticodon occurs in:
a. DNA b. tRNA
c. mRNA d. rRNA
986. DNA & RNA show similarity in having:
a. Polymers of nucleotides b. similar pyrimidines
c. double stands d. similar sugars
987. Structure of DNA was given by:
a. Kornberg b. Nirenberg
c. Watson & Crick d. Holley & Nirenberg
988. Cellulose is:
a. Monosaccharide b. Polysaccharide
c. lipid d. Disaccharide
989. Cellulose eaten by grazing animals is:
a. Passed out undigested
b. Digested by digestive enzymes
c. Digested by intestinal bacteria
d. Digested by digestive enzymes & intestinal bacteria
990. Amiono acids are formed during digestion of:
a. Starch b. Fats c. Minerals d. Proteins
991. On hydrolysis, nucleic acid produces:
a. sugars only b. nitrogen bases only
c. Phosphoric acid d. all the above
992. Double helical structure of DNA was proposed by:
a. Kornberg b. Nirenberg
c. Watson & Crick d. Wilkins & Franklin
993. In DNA, guanine lies apposite:
a. Urail b. Cytosine
c. Adenine d. Thymine
994. tRNA is
a. Messenger RNA b. Soluble RNA
c. rRNA d. Microsomal RNA
995. RNA takes part in synthesis of :
a. DNA b. Carbohydrate
c. Fat d. Protein
996. Bund present between two nucleosides of a polynucleotide is:
a. Covalent bond b. Hydrogen bond
c. Phosphodiester bond d. High energy phosphate bond
997. A segment of DNA has 120 adenine & 120 cytosine bases. The total number of nucleotides present in the segment is:
a. 120 b. 240 c. 60 d. 480
998. DNA strands are anti parallel because of :
a. tRNA b. mRNA
c. rRNA d. chromosomal RNA
999. The smallest RNA is:
a. tRNA b. mRNA
c. rRNA d. chromosomal RNA
1000. Hydrogen bonds between cytosine & guanosine are:
a. 2 b. 3 c. 1 d. 4
1001. The two strands of DNA are held together by bonds of:
a. N b. O c. H d. N

1002. Glycogen is a polymer of:
a. Galactose b. Glucose
c. Fructose d. Sucrose
1003. DNA doesn't occur in :
a. Nucleus b. Ribosomes
c. Mitochondria d. Plastids
1004. The most diverse chemicals are:
a. Polysaccharides b. Lipids
c. Proteins d. Sugars
1005. In DNA, guanine is 10% the content of thymine is:
a. 80% b. 10%
c. 20% d. 10%
1006. Nitrogen bases of DNA are:
a. ATUC b. UTGC
c. ATGC d. AURC
1007. Nitrogen is an important component of:
a. Lipids b. Amino acids
c. Carbohydrates d. CO_2
1008. Cellulose occurs in:
a. Tunicates b. Cell membrane
c. Cell wall d. Cell interior
1009. Nucleotides occur in
a. Ribosomes
b. Mitochondria
c. DNA, RNA chloroplasts nucleus
d. All the above
1010.Functional protein is:
a. Enzyme b. Collagen
c. Ossein d. Vitamins
1011. Variability found in DNA is due to :
a. sugars b. Nitrogen bases
c. Phosphates d. Glycosidic bonds
1012. Watson & Crick are known for their discovery that DNA is:
a. single stranded b. double stranded
c. having deoxyribose only d. template for rRNA synthesis
1013. Casein found in milk is:
a. Fat b. Carbohydrate
c. Protein d. Bacterium
1014. Which one is absent in protein?
a. C b. N c. P d. S
1015. One of the following is not a carbohydrate:
a. Maltose b. Pepsin
c. Cellulose d. Ascorbic acid
1016. Which one is not a Protein?
a. Myosin b. Actin
c. Albumin d. Haematin
1017. Which one yields protein on hydrolysis?
a. Fatty acid b. Nucleic acid
c. Amino acid d. none of the above
1018. What is a constitute of natural silk?
a. Phosphorus b. Nitrogen
c. Potassium d. Magnesium
1019. Ester linkages occur in:
a. Nucleic acids b. Lipids
c. Carbohydrates d. Proteins
1020. Maximum amount of RNA is found in:
a. Cytoplasm b. Nucleolus
c. Ribosomes d. Chloroplasts
1021. Choose the correct statement:
a. DNA is a hereditary material
b. RNA is a hereditary material
c. DNA is a hereditary material but where it is absent RNA can act as a hereditary material
d. Both DNA & RNA are hereditary materials
1022. Which one is correct base pairing for DNA?
a. C-U b. TG c. A-T d. T-U
1023. Enzymes do not occur in :
a. Viruses b. Bacteria c. Fungi d. Algae
1024.The enzymes purified & crystallized for the first time was:
a. Urease b. Insulin
c. Diastase d. Zymase
1025. At high temperature, enzymes are:
a. killed b. Denatured
c. Inactivated d. Highly effective

1026. Enzymes are polymers of:
a. Fatty acids b. Amino acids
c. Henose sugar d. Inorganic phosphate

1027. Which of the following components may be present in the cell wall of plant cells?
a. Pectin b. Lignin
c. Cellulose d. all of the above

1028. The 3 kinds of macro molecules present in the plasma membrane are:
a. RNA,DNA & protein
b. RNA, proteins & carbohydrates
c. DNA, proteins & lipids
d. Proteins, lipids & carbohydrates

1029. The cell membrane is composed of:
a. Phospholipid b. Nucleo protein
c. Polysaccharides d. Lipoprotein

1030. Which of the following cell organelles is rich in catabolic enzymes?
a. E.R b. Golgi body
c. Lysosomes d. Ribosome

1031. All the activities of the cell are guided & controlled by:
a. Ribosomes b. Cytoplasm
c. Nucleus d. Mitochondria

1032. Double membrane covering doesn't occur in :
a. Mitochondria b. Nucleus
c. Chloroplasts d. Lysosomes

1033. Which of the following is the largest cell organelle?
a. Mitochondrion b. Ribosome
c. Lysosome d. Spherosome

1034. Fluid-mosaic model of plasma membrane was proposed by:
a. Malpighi b. Danielli & Darson
c. Robertson d. Singer & Nicolson

1035. The main function of plasma membrane is:
a. control of cell movements
b. controls cellular activities
c. maintain the cell shape & size
d. regulate the flow of material into & out of cell

1036. Protoplasm found inside the values is known as
a. Cytoplasm b. Elaioplast
c. Amyloplast d. Nucleolus

1037. Plasma lemma is:
a. Preamble b. Selectively preamble
c. Non preamble d. Semi preamble

1038. Which is the vacuolar membrane of the cell?
a. Cytoplasm b. Elaioplast
c. Amyloplast d. Nucleolus

1039. Which is the following structures of cells is non living?
a. Cell wall b. Plasma membrane
c. Cytoplasm d. Nucleus

1040. Amphipathy means
a. hydrophilic molecule
b. Hydrophobic molecule
c. hydrophilic & hydrophobic groups in the same molecule
d. all the above

1041. Endocytosis means:
a. Phagocytosis b. Pinocytosis
c. Both a & b d. Non of the above

1042. The process of taken gin liquid material by in folding of membrane is known as
a. Phagocytosis b. Dsmosis
c. Active transport d. Pinocytosis

1043. The movement of substances across the cell membrane from lover to higher concentration with the utilization of energy is known as
a. Osmosis b. Passive transport
c. Active transport d. Facilitated transport

1044. Taking in of food particles or foreign bodies through cell membrane is called
a. Phagocytosis b. Pinocytosis
c. Osmosis d. all the above

1045. For passage of water plasma membrane is
a. Permeable b. Impermeable
c. Semi permeable d. Selectively permeable

1046. Mitochondria were first observed by
a. De Bary b. Robert Brown
c. Altman d. Kolliker

1047. The transport molecules of cell membrane are

a. Lipids b. Phospholipids
c. Glycolipids d. Proteins

1048. Peromisomes & Gloyonysomes are
a. Energy transforming organelles
b. Membrane less organelles
c. Macrobodies
d. Microbodies

1049. A rough ER process a number of structures embedded is it
a. Microbodies b. Prop lastids
c. Lysosomes d. Ribosomes

1050. Plastids giving color to flowers & Fruits are
a. Chromoplast b. Lecuoplast
c. Chromoplasts d. Proplastids

1051. Cell organelle involved in breaking of comp less macromolecules is
a. Lysosome b. Goliapparatus
c. Mitochondrion d. Leucoplast

1052. Which is not properly paired?
a. Golgi apparatus breaking of comp less maromo lectures
b. ER protein synthesis
c. chomp last photosynthesis
d. Mitochondria indicative phosphorylation

1053. Nucleosus contains
a. Genetic instructions
b. Ribosome assembly line
c. protein synthesis machinery
d. Enzymes of polysaccharide formation

1054. Besides proteins ribosome certain
a. DNA b. RNA
c. Both DNA& RNA d. Lipids

1055. The smallest organelles is a cell are
a. Lysosomes b. Sphaerosomes
c. Peromisomes d. Ribbosomes

1056. Structure present between nuclear envelope & plasma membrane is
a. Nucleoplasm b. Cytoplasm
c. Vacuole d. Protoplasm

1057. An average eukaryotic cell is …….. times larger than a prokaryotic cell
a. 100 b.50 c. 10 d. 5

1058. A larger organism has
a. larger cells b. more interpetiolar material
c. more cells d. both a & b

1059. Which one is a microbody ?
a. Sphaerosome b. Lysosome
c. Pernisome d. Ribosure

1060. Drganelle capable of self replication is
a. Robosome b. ER
c. Lysosome d. Mitochondria

1061. Mitochondria are found is
a. plant cells b. Animal cells
c. All cells d. All eukaryotic cells

1062. All are membrane bound organelles except
a. Mitochondria b. Lysosomes
c. spherosomes d. Ribosome

1063. Which of the following cell organelles provides mechanical support to cell?
a. Ribosomes b. Golgibodies c. Lysosome d. ER

1064. The ER occasions the from of
a. vesicles b. catenae
c. Tubules d. all of the above

1065. ER often bears
a. contrails b. Lysosome
c. Ribososome d. Plastids

1066. Ribosome is compo red of
a. a Single unit b. 2 Subunits
c. 4 Subunits d. 5 Subunits

1067. Golgi complex is not found in
a. Nerve cells b. RBC
c. Germ cells d. All of the above

1068. Golgi complex was its discovered by
a. Golgi b. Brenda
c. Palade d. Porter

1069 Golgi bodies are concerned with
a. Excretion b. secretion
c. ATP Synthesis d. RAN synthesis

1070. Main function of lysosomes is
a. secretions b. Respiration
c. Entruncechlar digestion d. Intracethalar digestion
1071. Centribles are found
a. Singly b. Pairs c. Triplets d. Cluadruplests
1072. Flagella & cilia help is
a. Respiration b. co – ordination
c. Movement d. All the above
1073. Search is commonly stored in
a. chloroplasts b. Amyloplasts
c. Chromo last d. leucoplast
1074. Rigidity of cell wall is due to
a. Pectin b. Embryonic cells c. Sobering d. Cut in
1075. ER is lacking is
a. Bacteria b. Embryonic cells
c. Ova d. All of the above
1076. Polysome is a chain of
a. Onysomes b. Sphaerosomes
c. Ribosomes d. Dictysomes
1077. RBC of mammals are biconcave circular empts that of
a. Camel b. Man c. Monkey d. Rat
1078. Nuclear employee is composed of
a. Single membrane b. 2 Membrane
c. Without membrane d. None of the above
1079. Nucleoli are not present in
a. Eukaryotes b. Maize plant
c. Pancreas d. Blue green algae
1080. Nucleclolus is formed form
a. Nuclear b. Chromosome
c. Sat – chromosome d. Grant chromosome
1081. Hydroplasm of values processes
a. Water b. Minerals
c. Water & minerals d. Air
1082. Excretory products pass out of the cell through
a. Pinocytosis b. Phagolytosis
c. Enocytosis d. Endocytosis
1083. Naked DNA is found in
a. chloroplasts b. Nucleus
c. Lysosome d. Goli complex
1084. Pigment free plastidscure
a. chloroplast b. chomoplasts
c. Lysosome d. Leucoplasts
1085. A mutually benefical association the partness is.
a.mutualism b.commensalism
c.parasitism d.none of the above
1086. Eating and removal of dead flesh is called:
a. scavenging b.parasitism
c. predation d.commensalism
1087. The term ecology was proposed by:
a. Reiter b.Tansley
c. Haeckel d. Robert Hook
1088. Which is the best soil for plant growth?
a.loumy soil b.sandy soil
c. gravel d.clayey soil
1089. Trophic level are formed by:
a. plants only b. animal only
c. carnivores only d. organism linked in food chain only
1090. All the living organism on earth constitute:
a. biosphere b.community
c. biome d. association
1091. Who purposed the 'ecosystem'?
a. odum b. Tansley
c. lederberg d. linnaers
1092. The pyaramid of energy is always:
a. erect b. inverted
c. linear d. pyramidal
1093. Plant constitute the:
a. 1st trophic level b.2nd trophic level
c.3rd trophic level d. 4th trophic level
1094. Gaseous Nitorgen can be absorbed by:
a. All the green plants
b. all the bacteria and some green algae
c. some bacteria and blue green algae
d. all the non-green plants

1095. Water holding capacity is highest in :
a.clay soil b.loam soil
c.silt soil d.sandy soil

1096. Alpine plants show _____ characters.
a.hydrophytic b.xerophytic
c.mesophytic d.halophytic

1097. The germination of the fruit itself is called :
a.ovipary b.vivipary
c.epigeal germination d.hypogeal germination

1098. Which is the most causative factor of destertification ?
a.tourism
b. over-grazing
c. developmental overartivites

1099. In a biotic community primary consumer are:
a. herbivores b.carnivores
c. omnivores d. detritivores

1100. The importance of ecosystem lies in:
a. flow of energy b. cycling of materials
c. both of the above d. none of the above

1101. Niche of a species in an ecosystem refers to its:
a. function at its place of occurrence
b. place of its occurance
c. competitive ability
d.center of origin

1102. In which of the following ecosystem is species diversity lowest?
a. grassland b. deciduas forest
c. tundra d. tropical rain forest

1103. Species ecology is:
a. autoecology b. synecology
c. community ecology d. palaecology

1104. Population whose members reproduce asexually is:
a. panmictic b. apomictic
c. amphimictic d. species

1105. Population whose members reproduce sexually is:
a. panmictic b. apomictic
c. amphimictic d. species

1106. Ecotypenis :
a. generally different but phenotypically similar
b. generally similar but ecologically different
c. generally adapted ecological race
d. generally and phenotypically dissimilar members of different species ecologically adapted to an area.

1107. Family herd and tripe are :
a. higher in rank than a population
b. higher in rank than a species
c. Intermediate between local population and species
d. subordinate in rank to local population

1108. The factors involved in the formation of a new species are :
a. competition and variation b.isolotion and competition
c. competition and mutation c.isolation and mutation

1109. An animal which lives in flocks is :
a.deer b.monkey
c.elephant d.parrot

1110. An animal leading a solitary life is :
a.deer b.seal
c.fon d.hamster

1111. The occurance of forms of individual in the same species is called ;
a.differentiation b.dimorphism
c.trimorphism d.metamerism

1112. The dominant individual / learder of a herd is :
a.always a male b.always a feamale
c.generally a male d.generally a female

1113. The factor which doesn't determine population size is :
a.mortality b.emigration
c.migration d.immigration

1114. Population size of an area increases due to:
a. Emigration b. mortality
c. migration d. notality

1115. Community is:
a. a particular species b. a particular group of animals
c. all the organism in a given area d. none of the above

1116. Association of N2 fiming bacteria with the leguminous:
a. mutualism b. commensalisms

c. Neutralism d. parasitism

1117. Bacteria of large intestine normally present there are:
a. preators b. commensals
c. symbionts d. parasities

1118. Mycorrhiza association of fungus & angiospermic root is :
a. Amensalism b. Mutualism
c. Parasitism d. commensalisms

1119. Competition between two of species:
a. Result in dying out one of species
b. Fories one of the species to live elsewhere
c. Switch over to another kind of food
d. All of the above

1120. A group of several species living together with mutual tolerance or adjustment and benefical interactions in a natural area is known as :
a.speccies b. population
c. Biotic community d. All of the above

1121. Interaction between 2 organism in which one organism kills and feed the 2nd organism is called:
a.Scavenging b. Predation
c. Parasitism d. none of the above

1122. Competition among plants in a community if for:
a. water nutrients b. nutrients
c. sunlight d. all of the above

1123. Which is a protective device in animals?
a. competition b. commensalism
c. mimicry d. symbiosis

1124. Female mosquitoes sucking human blood are:
a. permanent parasites b. endoparasites
c. semiparasites d. intermittent parasites

1125. Mimicry is a device for:
a. concealment from predator b. concealment from prey
c. Both a & b d. becoming conspicuous

1126. Climan community is :
a. 1st stable community
b. unstable
c. unstable that develops in the begnning of sucession
d. The last stable community

1127. Series of changes in previously barren area is :
a. sere b. climatic climan
c. primary sucession d. secondary sucession

1128. Lichens & mosses occur in :
a. psammosere b. hydrosere
c. xerosere d. hydrarch

1129. Plants & animals living in a particular area constitute:
a. Flora & fauna b. community
c. ecosystem d. ecology

1130. Plankton is:
a.sea scum
b.floating microspic plants & animals
c. floating plants
d. anylayer of aquatic organisms

1131. Association of sea anemone & hermit crab in gastropod shell is:
a. symbiosis b. commensalisms
c. parasitism d. amensutism

1132. Plant succession occurring in a sandy area is called :
a. psammusere b. halosere
c. xerosere d. hydrosere

1133. A community which starts succession in a habitat is:
a. pioneer community b. seral community
c. biotic community d. ecosere

1134. The early settlers on a barren area are:
a. terms b.mosses
c. lichens d. diatoms

1135. What does the following sequence represent?
Blue green algae ----- crustose lichens ------ folicose lichens ----- mosses----shrubs --------- dicotyledonous
a. a food pyramid b. ecological succession
c. genetic drift c. phylogenetic trend

1136. Last stabilized community in a plant succession is called:
a. seral community b. pioneer community
c. ecosere d. climan community

1137. Climax vegetation of a region is generally:
a.xerophytic b. hydrophytic
c. merophytic d. depend upon climate

1138. The first plants to reappear in a burnt forest area will be:
a. grasses b. ferms
c.mosses d. liver worts

1139. A mutually beneficial association necessary for survival of both partners is:
a. mutualism/symbiosis b.commensalism
c.amensalism d. both a & b

1140. In ecology sucession from pioneer to climan commuity, the biomass shall
a.decrease b. increase and then decrease
c. no relation d. increase continuously

1141. An association of individuals of different species living in the same habitat and having functional interactions is ;
a.population b.ecological niche
c.biotic community d.ecosystem

1142. Insectivorous plants are adapted to soils :
a.rich in water
b.deficient in water
c.deficient in nitrogenous compounds
d.deficient in trace elements

1143. A parasite living within tissue of a host is :
a.epiphyte b.endophyte
c.ectophyte d.none of the above

1144. Deserts can be converted into greenland by :
a.tropical tree b.oxylophytes
c.halophytes d.psammophytes

1145. Ecosysten may be defined as :
a.a species along with environment
b.plants found in water
c.plants found on land
d.all plants and animal species along with environment

1146. Temperature changes in the environment affect most of the animals which are :
a.aquatic b.desert
c.poikilothermal d. homoiothermal

1147. A pond / lake is :
a.a biome
b.a natural ecosystem
c.an artifical ecosystem
d. a community of plants & animals only

1148. Biome is :
a. the fauna of an ocean b. the flora of land
c. communities of organism interacting with one another
d. all the above

1149. The transition zone where two different types of communities meet is called:
a. ecotype b. ecocline
c. ecotone d. ecosystem

1150. Which of the following is a biome?
a. wheat field b. rain water pond
c. grass field c. deciduous forest

1151. Primary consumer in a detritus food chain is:
a. herbivores b. bacteria , fungi,etc
c. Insect, larva, nematodes d. all of the above

1152. Total organic matter present in an ecosystem is called:
a. biomass b. biome
c. litter d. food

1153. Putrefying organismsare:
a.producers b.reducers
c.consumers d.parasitic

1154. The most important organism for an ecosystem are :
a.herbivores b.carnivores
c.green plants d.protozoa

1155. A peacock eats snakes which eats frog.These eat hoppers which in turn live on leaves of plants .The peacock is:
a.primary consumer b.reducer
c.consumers d.parasitic

1156. A food chain consists of :
a.producers b.consumer
c.decomposers d.producers and consumers

1157. Trophic levels in a food chain are formed by :
a.producers b.consumers
c.decomposers d.producers and consumers

1158. A food chain always starts with :

a.photosynthesis b.respiration
c.N2 fixaion d.decay

1159. Primary consumers are :
a.green plants b.herbivores
c.carnivores d.all of the above

1160. Secondary consumers are :
a.green plants b.herbivores
c.carnivores d.all of these

1161. Which of the food chain directly depends on solar radiation?
a.predator b.grazing
c.detritus d.none of these

1162. Producers in any grazing food chain :
a. eed the herbivores b.feed the carnivores
c. lean the atmosphere d.capture solar enery

1163. Converters or transducer organisms in the food chain are called:
a.herbivorers b.carnivores
c.decomposers d.producers

1164. Biological equilibrium is equilibrium among
a.producers
b. producers and consumers
c.decomposers
d. producers , consumers and decomposers

1165. Root is feebly developed and stem is soft with a large number of air cavities in :
a.lithophytes b.halophytes
c.hydrophytes d.aerophytes

1166. Vegetation of a geographic region with low rainfall , high temperature loose and sandy soil is of the type called
a.grassland b.scrub forest
c.xerophytic d.evergreen tropical forest

1167. If phytoplanktons are destroyed in the sea
a.it will affect food chain
b.no effect will be seen
c.algae will affect more space to grow
d.primary consumers will grow more

1168. Ecological pyramidswere given by:
a. Elton b. haeckel
c. odum d. reiter

1169. In a pond ecosystem, the pyramid of number is:
a. linear b.upright
c. inverted d. inverted upright

1170. In a grassland ecosystem, shape of pyramid of biomass is:
a. linear b. upright
c.inverted d. inverted upright

1171. Pyramid of energy in ecosystem is:
a. inverted b. upright
c. linear d. upright & inverted

1172. In pyramid of food, the producers occupy:
a. the base
b. position near the base
c. apex
d. position near apex

1173. Energy flow in an ecosystem is:
a. unidirectional b. bidirectional
c. multi directional d. all the above

1174. Graphic representation of biomass relationship between the producers & consumerin an ecosystem is called:
a. tropical level b. ecological system
c. ecological niche d. ecological pyramid

1175. The increasedproductivity of lakes & streams brought about by nutrient enrichment is called :
a. Green house effect
b. eutrophication
c. biomagnifications
d. bio chemical oxygen demand

1176. The typical biome of an area having 50-100cm of rainfall is:
a. desert b. grassland
c. deudous forest d. coniferous forest

1177. An ecological niche is normally occupied by:
a. a population b. a small community
c. competing species d. competing genera

1178. Grassland of U.S.A is :
a. prairies b. steppes
c. pampas d. veldts

1179. Plankton, Nekton& Benthos are not the components of one of ecosystems which is
a.oceans b. fresh water river
c. grassland d. pond or lake
1180. The food chain in which microorganismsbreak-down energy rich compounds
Synthesized by producers:
a. predator food chain b. parasitic food chain
c. detritus food chain d. none of these
1181. When a big fish eats a small one which eats water fleas supported by Phytoplankton, water fleas are:
a. producers b. primary consumers
c. secondary consumers d. top consumers
1182. Deciduous plants are those in which leaves falls:
a. once a year b. twice a year
c many times a year d. none of the above
1183. Which forest has aximum diversity ?
a. subtropical rain forest b. conferous forests
c. tropical forests d. deciduous forest
1184. Which one is not a factor of the abioticenvironment ?
a. sunlight b.decomposers
c. water d.temperature
1185. During winter , polar bear
a. hibernates
b. aestivates
c. remains active
d. migrates to warmer area
1186. Niche represents:
a. habitat
b. micro habitat
c. habitat as well as inter relations
d. habitat as well as climate
1187. Alpine tundra is found in:
a. Siberia b. Greenland
c. both a&b d. himalays
1188. Rainfall is absent but precipitation occurs in:
a. arctic desert b. tropical desert
c. chapparai d. savannah
1189. Free floating plant found below the water surface is:
a. *Pistia* *b.Lemna*
c. Ranuculus *d.Ceratophyllum*
1190. Annual rainfall in the area of a tropical deciduous forest is:
a. over 300 cm b. 200-250cm
c. 100-150cm d. 50-75cm
1191. Alpine plants shows:
a. mesophytism b. halophytism
c. xerophytism d. lumuriam growth
1192. A habitat with long severe winter & growing season of a few months of summer forms:
a. grassland b. tundra ecosystem
c. taiga d. savannah
1193. Rhododendron is found in:
a. tropical forest b. mangroves
c.alpinecore d.gangetic platin
:1194.Succulents occur in:
a. desert b. tundra
c. temperate deciduous forest d. tropical rain forest
1195. Extreme xerophytic condition occurs in:
a. cactus b.*Nerium*
c. *Capparis* d.*Brassica*
1196. Thick cuticle occurs on the leaves of plants belonging to:
a. cool habitats b. warm habitats
c. dry habiats d. wet habitats
1197. Stomata are sunken in:
a. mesophytes b. xerophytes
c. hygrophytes d. hydrophytes
1198. Relative to roots, the shoots are massive in plants of:
a. desert b. moist temperature
c. tundra d. moist tropical forest
1199. Submerged hydrophytes have a well developed:
a. vascular sstem b. aerenchyma
c. root system d. stomatal system
1200. Stem of submergred hydrophytes is soft and weak because of:
a. absence of phloem

b. absence of stomata
c. absence of xylem
d. feebly developed supporting tissue & xylem

1201. Aquatic plants generally have a
a. well developed vascular system
b. Reduced vascular system
c. well developed root system
d. well developed stomatal system

1202. The floating leaves of an aquatic plant have
a. stomata on upper surface
b. stomata on lower surface
c. stomata on both surfaces
d. no stomata

1203. A plant devoid of root is:
a. *Wolffia* *b. Vallisneria* *c. Hydrilla* *d. Azolla*

1204. Typha is a
a. Submerged hydrophyte
b. floating hydrophyte
c. Emerged hydrophyte
d. attached hydrophyte with floating leaves

1205. which character is not present in the hydrophytes?
a. poor roots
b. Plentiful Xylem and sclerenchayma
c. leaves with stomata on upper surface or absent
d. Abudent sclerenchyma

1206. An ecosystem dosenot normally alter because it is in a state of:
a. Homeostasis b. Imbalance
c. Deficient light d. Deficient componensts

1207. Two components of an ecosystem are:
a. Plants and animals
b. weeds, trees, animals and man
c. Energy flow and mineral cycling
d. Biotic and Abiotic

1208. The driving force for an ecosystem are:
a. Biomas b. producers
c. carbohydrates in producers d. solar energy

1209. The major components of an ecosystem is:
a. food chain and energy flow
b. mineral cycling and energy flow
c. food chain and energy flow
d. energy flow and decomposers

1210. Biotic components of an ecosystem include:
a. Producers, consumers and decomposers
b. Producers and consumers
c. Producers only
d. consumers only

1211. A food chain can have trophic levels
a. 3 or 4 b. 3 c. 2 d. 1

1212. In a food chain, the initial organism are:
a. Top consumers b. Seconday consumers
c. Primary consumers d. Photosynthates

1213. In a food chain, herbivores are:
a. Primary producers b. Primary consumers
c. seconday consumers d. Decomposers

1214.Green plants constitute:
a. Complete food chain b. 2nd trophic level
c. First trophic level d. 3rd trophic level

1215. An ecosystem is an interacting system of:
a. Communities
b. communities and their physical environment
c. Populations
d. Individuals

1216. Which is correct food chain in Grassland:
a. Grass-snake-Insect-Deer
b. Grass-wolf-Deer-Buffalo
c.Bacteria- Grass-Rabbit-wolf
d. Grass-Insect-forg-Snake

1217. Which is primary consumer?
a. Carnivore b. Scavenger
c. Saprophyte d. Herbivore

1218. Decomposers of an ecosystem include:
a. Microscopic animals
b. Bacteria and fungi
c. Both a and b

d. bacteria, fungi and microscopic animals

1219. In an aqueous environment, microscopic animals and plants are collectively known as:
a. Plankton b. Herbivore c. Commensals d. flora and fauna

1220. Nepethes belongs to the category of:
a. Primary consumer b. Producer
c. Secondary consumer d. Both a and b

1221. Which one occurs at the same trophic level?
a. crow and cow b. snake and earthworm
c. Tiger and wild Boar d. Deer and Bee

1222. In an ecosystem, which one shows one way passage?
a. Free energy b. carbon
c. Nitrogen d. Patossium

1223. Pyramid of numbers in a grassland ecosystem is:
a. Always inverted b. Always upright
c. Both a and b d. Spindle shaped

1224. In a tree ecosystem, the pyramid of numbers is:
a. Upright b. Inverted
c. Spindle like d. Variable

1225. Which one lies at the primary level of consumers?
a. Fishes b. Eagles
c. cattle and insects d. snakes and frogs

1226. The thickening of cell wall, lignification and specialization for mechanical function are characteristic of:
a. collenchyma b. Sclerenchyma
c. chlorenchyma d. Parenchyma

1227. Bast fibres in woody stem belongs to:
a. cork b.corten
c. Xylem d. Phloem

1228. Vessels and companion cells are characteristics of Xylem and phloem of:
a. pteridophyata b. gymnosperms
c. angiosperms d.bryophytas

1229. Manufactured food in green plants moves from the leaves to other plants through:
a. pith b. Xylem c. Corten d. Phloem

1230. Companion cells are usually seen associtated with:
a. fibres b. parenchyma
c. Xylem vessels d. sieve tubes

1231. The albuminuous cells are present in phloem of:
a. gymnosperm b. angiosperm
c. algaue d. bryophytes

1232. The narrow layer of thin walled cells which separates the wood from phloem in dicots is:
a. cork cambium b. Pericycle
c. Vascular Cambium d. endodermis

1233. Phellogen is:
a. intercalary meristem b. apical meristem
c. primary meristem d. Secondary meristem

1234. Leaves grow due to presence of:
a. apical meristem b. Diffused meristem
c. Interculary meristem d. Mass meristem

1235. The term meristem was given by:
a. Nageli b. Cohn
c. Hanstein d. Schmidt

1236. Epidermes is produced from:
a. Procabium b. protodeum
c. Phellogen d. Ground meristem

1237. Meristem helps in:
a. Absorbtion of water b. Absorption of minerals
c. Translocation of food d. Growth of plants

1238. Secondary meristem develops from:
a. vascular cambium b. permanent tissue
c. primary meristem d. Lateral meristem

1239. Meristematic cells have:
a. thin walls b. prominent nuclei
c. Absence of vacuoles d. All of the above

1240. Intrafascicular cambium is derived from:
a.Protoderm b. Procambium
c. Phellogen d. Ground meristem

1241. Root apical meristem can be capped by histogen known as:
a. Calyptrogen b. Dermatogen
c. Plerome d. Periblem

1242. Intercalary meristem occurs in:

a. secondary growth b. primary growth
c. Apical growth d. Lateral branches

1243. Intercalary meristem occurs in:
a. Mint b. grass c. cortex d.all of them

1244. Which tissue provides maximum mechanical strength to the plant?
a. parenchyma b. Xylem
c. Collenchyma d. Phloem

1245. The simple tissue consisting of living cells and providing mechanical strength to plants is:
a. Sclerenchyma b. parenchyma
c. Chlorenchyma d. collenchyma

1246. A cojoint vascular bundle is one in which xylem and phloem are:
a. joined together b. separate
c. on same radii d. on alternate radii

1247. The plant tissues become woody by a process called:
a. Suberisation b. Pectification
c. calcification d. lignification

1248. Cellular layer covering plant organ is:
a. Epidermis b. Hypodermis
c. cuticle d. Endodermis

1249. The protective non cellular layer found on the outside of plant organs is:
a. epiblema b. Velamen
c. Cuticle d. Endodermis

1250. Tissue forming long flexible but strong strands in leaf stalks is:
a. Sclerenchyma b. Collenchyma
c. Xylem d. Prosenchyma

1251. Flesh of a fruit is mostly of:
a. Parenchyma b. Collenchyma
c. Sclereids d. Meristem

1252. The most common ground tissue in plants is:
a. Epidermis b. Cortex
c. Parenchyma d. Collenchyma

1253. Most metabolism of plants is carried in tissue:
a. Phloem b. meristem
c. Collenchyma d. Parenchyma

1254. The tissue most abundant in Hydrilla is:
a. Aerenchyma b. Collenchyma
c. Phloem d. Sclerenchyma

1255. The tissue which has dead cells in functional state is:
a. Collenchyma b. Sclerenchyma
c. Xylem d. Phloem

1256. Water conducting elements of gymnosperms and primitive angiosperms are:
a. Vessels b. Vessels elements
c. Tracheids d. Fibro tracheids

1257. Plant regeneration can occur from mature parenchyma because:
a. It forms the bulk of ground tissue
b. it can differentiate
c. there are no cell walls
d. only they are nucleate

1258. Internal plant organization is studied under:
a. anatomy b. Cytology
c. Chronology d. Morpholgy

1259. Anatomy is also called :
a. Histology b. Internal Morphology
c. Morphology d. Histo chemistry

1260. Xylem and Phloem belong to the group of:
a. Complex tissues b Simple tissue
c. specialized tissues d. Lactiferous tissue

1261. Vessels are absent in:
a. dicots b. monocots
c. gymnosperms d. none of the above

1262. Lumen is minimum in
a. Sclerenchyma b. Collenchyma
c. Parenchyma d. Epidemes

1263. Shoot is the first to die when:
a. phloem is blocked
b. bark is removed
c. apical meristem is injured
d. Xylem is removed

1264. Prosenchyma is a type of;
a. chlorenchyma b. Collenchyma
c. Parenchyma d. Sclerenchyma

1265. Tissue taking part in transporting organic nutrients from the source or storage region is:
a. Phloem b. Parenchyma
b. Vascular rays d. Xylem

1266. Sieve tubes are ideal for nutrient transport because they have:
a. no end walls
b. bordered pits
c. narrow lumen rich in cytoplasm
d. Broad lumen with little peripheral cytoplasm

1267. Tracheary elements are:
a. suberized
b. full of dense cytosol
c. elongated with lignified walls
d. small and numerous

1268. Sclereid is a:
a. Parainchymatous cell b. an individual sclernchymatous cell
c. Collenchymatous cell d. Chlorenchymatous cell

1269. Long pointed Sclerenchyma cells are:
a. Fibers b. Trachae
c. Wood parenchyma d. Sclereids

1270. Trachae occurs in:
a. Cambium b. Ground tissue
c. Xylem d. Phloem

1271. Fatty substance present is epidermal cell walls is:
a. Cutin b. Suberin
c. Wax d. Both b and c

1272. Collenchyma is characterized by:
a. Isodiametric cells with uniform thickenings
b. Isodiametic with uneven thickenings
c. Elongated cell with uniform thickenings
d. Elongated cells with thickenings at selected places

1273. Elongated cells with tapering ends are:
a. Vessels b. Sclereids
c. Tracheids d. Collenchyma

1274. A parenchyma cells storing ergastic materials is:
a. Storage cells b. Idioblast
c. Conidioblast d. Phragmoplast

1275. Callose blocks:
a. Older tracheids b. Heartwood
c. Seive tubes in summer d. Seive tubes in winter

1276. Name the tissue where cells are living, thin walled, iso diametric with intercellular spaces:
a. Prosenchyma b. Aerenchyma
c. Parenchyma d. Collenchyma

1277. Enucleate thin walled cells with perforated septa are:
a. Prosenchyma b. Sieve cells
c. Sieve tube elements d. Companion cells

1278. Latex cells occur in:
a. Banyan b. Calotropis
c. Oleander d. All of the above

1279. The term tissue was comed by:
a. Nageli b. Virchow
c. Malpighi d. Grew

1280. A tissue is grouping of cells similar in:
a. Function b. Structure
c. Heredity d. Origin and function

1281. Albuminous cells occur in
a. Xylem b. Phloem
c. Cortex d. Conjunctive Parenchyma

1282. Vascular budle having xylem and phloem on the same radius is:
a. concentric b. Radical
c. Open d. Collateral

1283. Death of protoplasm is a pre requisite for a vital function like:
a. Transport of sap b. transport of food
c. absorbtion of water d. Gaseous of exchange

1284. Collenchyma can be differentiated from parenchyma by:
a. living protoplasm
b. pecto cellulosic deposits at corners
c. cellulosic wall
d. No protoplasm

1285. Aerenchyma occurs in:
a. Mesophytes b. Xero phytes
c. Hydrophytes d. Sciophytes

1286. Angiosperms contain:

a. Mesophytes b. Xerophytes
c. Hydrophytes d. Sciophytes

1287. Which group possesses vessels in its xylem?
a. Pteridophytes b. Angiosperms
c. Gymnosperms d. Both b and c

1288. Which constitutes the thickening in collenchyma?
a. Suberin b. Cutin
c. Pectin d. Lignin

1289. Which one remains living in the mature xylem?
a. Vessels b. Tracheids
c. Xylem fibres d. Xylem parenchyma

1290. A living mechanical tissue with cellulosic wall thickening is:
a. Sclerenchyma b. Collerenchyma
c. Parenchyma d. Aerenchyma

1291. Collenchyma occurs in the stem and petioles of:
a. Xerophytes b. Monocots
c. Dicot herbs d. Hydrophytes

1292. Tracheids, trachea, wood, fibres and wood parenchyma occur in:
a. Xylem b. Cortex
c. Vascular stand d. Phloem

1293. An organized and differential cellular structure having cytoplasm but no nucleus is:
a. Vessel b. Xylem Parenchyma
c. Sieve tubes d. Tracheids

1294. A simple mechanical tissue with unlignified walls is:
a. Parenchyma b. Collenchyma
c. Sclerenchyma d. Chlorenchyma

1295. Companion cells are usually seen associated with:
a. Fibres b. Tracheids
c. Vessels d. Sieve tubes

1296. Vessels and companion cells occur in:
a. Angiosperms b. Gymnosperms
c. Pteridophytes d. Bryophytes

1297. Lignin occurs in the cell walls of:
a. Phloem b. Cork
c. Xylem cells d. Parenchyma

1298. In which of the following phloem occurs?
a. Maize b. *Cucurbita*
c. Sunflower d. *Dracaena*

1299. Epidermal outgrowths are known as:
a. Trichomes b. Stomata
c. Prickles d. Spines

1300. Cotton fibres are:
a. Bark fibres b. Phloem fibres
c. Pericycle fibres d. Epidermal fibres

1301. Which of the following has parallel venation in its leaves?
a. Castor b. Grass
c. Moss d. Fern

1302. Reserve food is mainly found in roots of:
a. Sweet potato b. *Coccinia*
c. *Cucurbita* d. *Hibiscus*

1303. A monocarpic plant is one which:
a. has only one carpel b. flowers once in a life time
c. produces only one seed d. produces only one fruit

1304. Maximum growth in root occurs:
a. at its apex b. in the presence of light
c. just behind the apex d. in the presence of soil

1305. Ginger is not a root but a stem because:
a. It stores food material b. It has a pungent taste
c. It has nodes and internodes d. It is not green in colour

1306. In monocot flowers we usually find:
a. Sepal b. Petal
c. Tepal d. None

1307. Ginger is a:
a. root b. stem
c. leaf d. flower

1308. Phyllode is the modification of:
a. stem b. stipule
c. petiole d. root

1309. Potatoes are cultivated by:
a. buds in axils of scale leaves b. cutting of roots
c. tubers d. seeds

1310. The plant that stores its food reserves in the leaves is:
a. Sweet potato b. Mango

c. Sugarcane d. Onion

1311. In onion the edible swollen portion is the:
a. aerial stem b. underground stem
c. internode d. leaf base

1312. In sweet potato food is stored in:
a. root b. stem
c. bud d. flowering axis

1313. Photosynthetic function in *Opuntia* is carried out by:
a. leaf b. Phyllode
c. Phylloclade d. bracts

1314. Which one of the following is a fruit?
a. potato b. radish
b. ginger d. lady's finger

1315. Phylloclade is a modification of:
a. stem b. leaf
c. root d. none

1316. Largest flower in the world is that of:
a. Lotus b. *Rafflesia*
c. Giant cactus d. Sunflower

1317. Which of the following is a polycarpic plant?
a. Bamboo b. *Agave*
c. Pear d. Pea

1318. The part of cauliflower that is eaten is:"
a. bud b. inflorescence
c. flower d. fruit

1319. In legumes reserve food material is stored in:
a. fruit walls b. seed coat
c. cotyledon d. radicle

1320. Aquatic plants have:
a. well developed stomata b. well developed aerenchyma
c. well developed roots d. well developed Xylem

1321. Insectivorous plants grow in the soil which is deficient in:
a. Ca b. N2
c. H20 d. Mg

1322. Pneumatophores (breathing roots) are usually present in:
a. xerophytes b. epiphytes
c. mangrove plants d. hydrophytes

1323.Potato tuber is a modified:
a. root b. stem
c. stolon d. bulb

1324. Which is not a root?
a. potato b, carrot
c. sweet potatod. radish

1325. Finely dissected leaves are common in:
a. submerged plants b. free floating plants
c. emerged plants d. rooted plants

1326. Which one is not a fruit?
a. Tomato b. Cucumber
c. Potato d. Pumpkin

1327. A shrub has:
a. short pliable stems b. long pliable stems
c. medium woody stems d. long woody stems

1328. A herb is the one having;
a. green soft and short terms b. woody short terms
c. a number of flowers and fruits d. annual growth.

1329. Liana is a:
a. weak stemmed trailers
b. woody stemmed climbers and twiners
c. trees with twisted stems
d. plants with woody

1330. A insectivorous plant is:
a. *Viscum* *b. Parkinsonia*
c. Santalum *d. Urticularia*

1331. Herbaceous plant that dies back to ground each year but sprouts again from underground parts is:
a. Perennial b. Biennial
c. Annual c. Winter annual

1332. Saprophytic plants lack:
a. Chlorophyll b. Vascular tissues
c. Roots d. Flowers

1333. Liana is a:
a. Herb b. Shrub
c. Tree d. Vine

1334. Sundew is:

a. *Dionae* b. *Nepenthes*
c. *Drosere* d. *Striga*

1335. A plant which manufactures its own food is:
a. Autotrophic b. Symbiotic
c. Heterotrophic d. Saprophytic

1336. *Nepenthes, Dionaea, Drosera* and*Urticularia* are:
a. Saprophytes b. Heterotrophs
c. Autotrophs d. Carnivorous

1337. A plant has weak stem which can coil around an upright support it is a:
a. Liane b. Twiner
c. Climber d. Creeper

1338. A plant lives for less than one year. It is:
a. Annual b. Biennial
c. Semi-annual d. Perennial

1339. Study of seeds is a part of:
a. Pomology b. Morphology
c. Reproductive morphology d. None

1340. Myrmecophily is association between a higher plant and:
a. Bacteria b. Fungi
c. Blue algae d. Ants

1341. *Pisum sativum* is:
a. Autotroph b. Heterotroph
c. Shrub d. tree

1342. Trees grow faster in:
a. Autumn b. Winter
c. Summer d. spring

1343. A plant expected to have an age of 15 years is:
a. *Eucalyptus* *b. Sequoia*
c. Mango d. *Sisso*

1344. A plant growing on another plant without drawing nourishments is:
a. Ectoparasite b.Epiphyte
c. Symbiont d. Saprophyte

1345. A plant that manufactures its own food is:
a. Autotroph b. Parasite
c. Epiphyte d. Saprophyte

1346. Partial parasite is dependent upon the host for:
a. support b. food at times
c. water d. water and minerals

1347. The tallest plant belongs to:
a. *Cedrus* *b. Eucalyptus*
c. *Sequoia* *d. Pinus*

1348. Parasitic plants obtain nourishments through:
a. Roots b. Haustoria
c. Thorns d. Pores

1349. Roots are feebly developed in:
a. Hydrophytes b. Mesophytes
c. Xerophytes d. Halophytes

1350. Conical fleshy roots occur in:
a. Sweet potato b. Dahlia
c. Asparagus d. Carrot

1351. Primary root and its branches constitute:
a. Adventitous root system b. Tap root system
d. fibrous roots d. Seminal roots

1352. Nodulated roots occur in:
a. Pea b. Wheat
c. Mustard d. Rice

1353. The fleshy root of sweet potato is:
a. conical b. Tuberous
c. Nodulose d. Fusiform

1354. Pneumatophores posses:
a. stomata b. water pores
c. lenticels d. root hairs

1355. In *Mirabilis* the roots are:
a. Tuberous b. Conical
c. Epiphytic d. Nodulose

1356. Climbing roots are found in:
a. Banyan b. *Pandanus*
c. *Piper* d. Sugarcane

1357. Adventitious roots are adventitious in their:
a. function b. position
c. place of origin d. Internal structure

1358. Nodulated roots make the plant rich in:
a. food b. protein

c. carbohydrates d. Fats

1359. Relation between bacteria and legumes having nodulated roots is:
a. Host parasitism b. Commensalism
c. Symbiosis d. Epiphytism

1360. Buttress roots are:
a. Aerial b. Underground
c. Aquatic d. Horizantal

1361. Roots associated with nitrogen fixing bacteria are:
a. Napiform b. Nodulose
c. Nodulated d. Moniliform

1362. The roots which help in absorption of nutrition from host are:
a. Host roots b. Climbing roots
c. Haustorial roots d. Epiphytic roots

1363. Growth of tap roots is:
a. towards gravity b. Towards light
c. Away from gravity d. Away from air

1364. Which is not a stem modification?
a. Ginger b. Mango Ginger
c. Potato d. Garlic

1365. Roots are used in vegetative propagation are:
a. Potato b. Sweet potato
c. Ginger d. Onion

1366. Root is a prolongation of:
a. Plumule b. Radicle
c, Coleoptile d. Periblem

1367. Radish has:
a. Napiform root b. Conical root
c. Fusiform root d. Tuberous root

1368. Which modification of root doesn't store food?
a. Tuberous b. Napiform
c. Conical d. Stilt

1369. Edible part of sweet potato is:
a. Stem tuber b. unripe fruit
c. Adventitious root tuber d. Rhizome

1370. Legumimuos plants possess:
a. Napiform roots b. Nodulated roots
c. Tuberous roots d. Fusiform roots

1371. Prop or pillar roots are:
a. Fasciculated roots b. Tap roots
c. Adventitious roots d. Secondary roots

1372. Plants with haustoria are:
a. Parasites b. Epiphytes
c. Insectivores d. Saprophytes

1373. Food is stored in one of the following:
a. Respiratory root b. Fibrous root
c. Fasciculated root d. Nodulated roots

1374. Pneumatophores are useful in:
a. Respiration b. Transpiration
c. Guttation d. Protein synthesis

1375. Sucking roots occur in:
a. Betel b. Orchids
c. *Cuscuta* d. *Tinospora*

1376 Carrot is:
a. stem b. flower
c. Root d. Underground stem

1377. Which is not a product of root?
a. Sugar beat b. Carrot
c. Radish d. Potato

1378. Buds occurring on the nodes outside the leaf bases are:
a. Axillary b. Extra axillary
c. Terminal d. Cauline

1379. Bulbils occur in:
a. *Oxalis* b. Agave
c. Lily d. All of the above

1380. Buds typically occur at:
a. leaf bases b. leaf axils
c. Tips of stems and roots d. tips of branches and leaf bases

1381. Stem is reduced in:
a. Rhizome b. Corm
c. Bulb d. Tuber

1382. Reduced stem bears leaves called:
a. Ramal b. Radical
c. Cauline d. Phyllodes

1383. A weak stem which itself coils around the support is:
a. Twiner b. Scrambler
c. Liana d. None
1384. Potato tuber is an underground stem because it bears:
a. Buds on the nodes b. Abundant food reserve
c. Adventitious roots d. No chlorophyll
1385. Thorn is a stem because it is:
a. Axillary b. Like a branch
c. hard pointed structure d. Aerial
1386. Epihyllous buds develop from:
a. leaf surface b. leaf axil
c. leaf base d. Stipule
1387. Thorns, spines and prickles are:
a. organs of defence b. organs of clinging
c. organs of offence d. specialized for gaseous exchange
1388. The common mode of vegetative reproduction in Ginger is through:
a. Corm b. Rhizome
c. Bulb d. Stem cuttings
1389. Edible portion of onion is:
a. tunic b. stem
c. scape d. leaf bases
1390. Banana is multiplied through:
a. Root cuttings b. Corm
c. Rhizome d. Bulb
1391. Potatoes are cultivated by means of:
a. Tubers b. Seeds
c. Axillary buds d. Root cuttings
1392. Primary function of stem is:
a. Anchorage
b. Bearing and holding of leaves
c. Absorption of water and minerals
d. vegetative multiplication
1393. Prickles of Rose are:
a. Accessory buds b. Extra - axillary outgrowths
c. Endogenous d. Exogenous
1394. Bulbs of onion/ garlic have:
a. greatly reduced stems b. no stem
c. extensive root system d. No leaves
1395. Photosynthetic fuction of cactus is performed by:
a. Phyllode b. Cladode
c. Phylloclade d. Leaves
1396. Phylloclade is a modification of:
a. leaf b. Root
c. Flower d. Stem
1397. Accessory buds are:
a. Axillary b. Adventitious
c. Terminal d. No true buds
1398. Largest bud is:
a. Cabbage b. Cauliflower
c. Agave d. Onion
1399. Stem is enlarged in:
a. Rhizome b. Corm
c. Bulb d. Tuber
1400. Bulb is modified:
a. leaf b. Shoot
c. Root d. Flower
1401. Arrangement of leaves on the stem branches is called:
a. Ptyxis b. Vernation
c. Prefoliation d. Phyllotaxy
1402. A swollen leaf base is called:
a. Pulvinus b. Amplexicaul
c. Winged d. Sheathing leaf base
1403. Phyllode is modified:
a. Leaf base b. leaf
c. petiole d. stipule
1404. Main function of leaf is:
a. Transpiration b. Exchange of gases
c. Photosynthesis d. cooling
1405. Vernation is:
a. Arrangement of veins on the lamina
b. Arrangement of leaves on the stem
c. Folding of leaves in bud
d. Arrangement of leaves in bud
1406. Compound leaves occur in:

a. Mustard b. *Syzygium*
c. Wheat d. Sweet pea

1407. Reticulate venation is found is:
a. *Ficus* b. *Canna*
c *Musa* d. *Zea*

1408. Parallel venation is found in:
a. *Mentha* b. Banana
c. Dalbergia d. Syzygium

1409. The leaf of *Mimosa pudica* is:
a. Simple b. Bifoliate
c. Bipinnate d. Trifoliate

1410. Lamina is reduced in:
a. xerophytes b. mesophytes
c. hydrophytes d. climbers

1411. Leaves borne on the main stem are called:
a. Radical b. Ramal
c. Peltate d. Cauline

1412. Plants without leaves during one season are called:
a. caducous b. deciduous
c. evergreen d. semigreen

1413. Unicostate venation is called:
a. palmate b.pinnate
c. reticulate d. parallel

1414. The leaves which fall down soon after their formation are called:
a. Deciduous b. Caducous
c. Ramal d. Cauline

1415. Leaves developing from discoid reduced stem of radish are:
a. Ramal b. Radical
c. Cauline d. Decidous

1416. A leaf without a petiole is:
a. Sessile b. Subsessile
c. Subpetiolate d. Simple

1417. A sensitive thread like structure which can coil around a support is:
a.Spring b. Tendril
c. Rachis d. Twiner

1418. A simple leaf is present in:
a. Peepal b. Mimosa
c. Neem d. All of the above

1419. Phyllode is a modification of:
a. Petiole b. Stem
c. Inflorescence d. Root

1420. A monocot can be distinguished from a dicot by:
a. Phyllotaxy b. Aestivation
c. Venation d. Vernation

1421. Leaves fall of from branches in winter due to:
a. formation of abscission layer b. shortening of day length
c. fall in temperature d. All of the above

1422. Leaf scar left in the area of leaf fall protects the plants from:
a. Heat b. Evaporation
c. Air d. Transpiration

1423. Petiole is modified into green leafy structure called:
a. Phyllode b. Phylloclade
c. Cladode d. Foliaceous petiole

1424. A plant with parallel venation is:
a. *Castor* b. Grass
c. *Colocasia* d. Mustard

1425. Arrangement of leaves on a stem branch is:
a. Venation b. Vernation
c. Ptyxis d. Phyllotany

1426. Occurrence of more than one type of leaves on the same plant is:
a. Heterophylly b. Phyllotanxy
c. Venation d. Vernation

1427. Leaves are changed into spines in xerophytic structures called:
a. Phyllode b. Cladode
c. Phylloclade d. All of the above

1428. Arrangement of flowers on the floral axis is:
a. Inflorescence b. Phyllotaxy
c. Placentation d. Corymb

1429. Axis of inflorescence is called:
a. Pedicle b. Peduncle
c. Petiole d. Scape

1430. For survival for race which is the most important part of the plant?

a. Flower b. Root
c. Leaf d. stem

1431. The flower with stalk is:
a. Pedicellate b. Petiolate
c. Sessile d. Subsessile

1432. The floral organs arise from:
a. mother axis b. thalamus
c. root d. pedicel

1433. Flower with all 4 types of floral organs is:
a. regular b. irregular
c. complete d. perfect

1434. Flower with both types of several floral organs is:
a. Complete b. Perfect
c. Incomplete d. Dimorphic

1435. Calyx with free components is:
a. Gamosepalous b. Polypetalous
c. Polysepalous d. Gamopetalous

1436. Undifferentiated sepals and petals are called:
a. Calyx b. Corolla
c. Perianth d. Epicalyx

1437. Small sized sessile flower is:
a. Incomplete b. Floret
c. Imperfect d. Translator

1438. The flower which can be divided into equal vertical halves by more than one plane of division is:
a. Heteromorphic b. Zygomorphic
c. Actinomorphic d. Cyclic

1439. The arrangement of sepals or petals in the floral bud is:
a. Aestivation b. Phyllotaxy
c. Vernation d. Prefoliation

1440. Androecium is the whorl of :
a. anthers b. Stamens
c. Filaments d. Tepals

1441. The whorl of carpel is:
a. Androcieum b. Gynaecim
c. Pistil d. Gynostegium

1442. The receptive part of the pistil is:
a. stigma b. style
c. Ovary d. Ovule

1443. Placentation is the arrangement of:
a. Ovules b. Sepals and petals
c. Stamens and carpels d. Carpels

1444. Ovary with one chambers is:
a. Mono carpellay b. Bilocular
c. Unilocular d. Uniovuled

1445. Flower with both sex organs is:
a. Intersexual b. Bithecous
c. Didynamous d. Diplostemonous

1446. Floret is:
a. small fruit b. Small flower
c. small sessile flower d. small neuter flower

1447. A dioecious plant has:
a. Bisexual flowers
b. Either male or females flowers
c. Both male and female flower
d. Bisexual and neuter flower

1448. Main role of a flower is to:
a. Produce offspring b. produce hormones
c. Attract insects d. secret honey

1449. Placenta of a flower is a tissue that:
a. Forms of pollen grains
b. attaches stamens with corolla/sepals/tepals
c. Bears ovule
d. Bears corona

1450. A flower divisible into equal halves by one plane only:
a. Actinomorphic b. Zygomorphic
c. Hemicyclic d. Asymmetric

1451. The female whorl of flowers is:
a. Calyx b. Corolla
c. Androecium d. Gynaecium

1452. Most important part in the life cycle of plant is:
a. Leaf b. Root
b. Flower d. All of the above

1453. Flower is a modified shoot in which:

a nodes are condensed b. nodes are elongated
c. internodes are condensed d. internodes are elongated

1454. Flower is complete when it has:
a. calyx , corolla, androecium and gynaecium
b. Calyx and corolla
c. Androecium and gynaecium
d. corolla, androecium and gynaecium

1455. The most suitable flower for study of floral parts is:
a. Rose b. Sunflower
c. Mustard d. Cucumber

1456. Which is present in monocot flowers?
a. Sepals b. Petals
c. Tepals d. None

1457. Arrangement of sepals and petals with respect to each other is:
a. Venation b. Vernation
c. Aestivation d. Phyllotaxy

1458. Floral formula represents:
a. position of flower
b. Symmetry of a flower
c. Functions of a flower
d. Diagrammatic notations of floral characters

1459. The tissue which attaches the ovules inside the ovary is:
a. Funicle b. Hilum
c. Placenta d. Chalaza

1460. A plant with both male and female flowers borne over it is:
a. Monoecious b. Dioecious
c. Unisexual d. Bisexual

1461. In maize, the flowers are:
a. Absent b. Unisexual but on different plants
c. Bisexual d. Unisexual but on the same plant

1462. Thalamus is a:
a. Base of flower b. base of Ovary
c. Modification of pollen d. Modification of petal

1463. A characteristic of angiosperms is:
a. Flower b.Root
c. Seed d. All of the above

1464. Nonessential parts of the flowers are:
a. Sepals and petals b. sepals and carpels
c. sepals and gynaecium d. Androecium and gynaecium

. 1465. Pollination is:
a. shedding of pollen from anthers
b. Similar to fertilization of animals
c. Transfer of pollen from anthers to stigma
d. Transfer of pollen from anthers to ovules.

1466. Self pollination is transfer of pollen from anther to stigma of:
a. Same flower
b. same or different flower of the same plant
c. Same or genetically similar flower of the same or other plant
d. Different flowers of the same plant

1467. The condition of maturation of anthers of one flower to stigmas of other flowers is:
a.Allogamy b. Chasmogamy
c. Xenogamy d. Homogamy

1468. Passage of pollen grains from anthers of one flower to stigmas of another flower is:
a a.Allogamy b. Chasmogamy
c. Xenogamy d. Geitonogamy

1469. Xenogamy is:
a. Autogamy b. Cross pollination
c. self pollination d. Cleistogamy

1470. Pollination occurring in closed flowers is:
a. Bud pollination b. Cleistogamy
c. Homogamy d. Chasmogamy

1471. Repeated self pollination over the generations produces:
a. New varities b.Elimination of weak traits
c. Better progeny d. Weak progeny

1472. Chasmogamy is pollination in:
a. bud condition b. closed flowers
c. open flowers d. unrelated flowers

1473. Pollination by water occurs in:
a. *Ceratophyllum* *b. Zostera*
c. Lemna d. All of the above

1474. Pollination carried out through water is:
a. Anemochory b. Hydrophily

c. Hydrochory d. Anemophily

1475. Colour of night blooming flowers is usually:
a. Violet to purple b. Red
c. Yellow d. Whitish

1476. Night blooming flowers attract pollinating insects with the help of:
a. Aroma b. Nector
c. edible pollen d. all of the above

1477. Brightly coloured scented flowers generally show:
a. Entomophily b. Malacophily
c. Myrmecophily d. Chiropterophily

1478. Pollination with the help of snails is called:
a. Myrmecophily b. Malacophily
c. Lepidopterophily d. Entomophily

1479. Entomophily is pollination by:
a. Insects b. Bats
c. Birds d. Ants

1480. Anemophily is pollination through:
a. water b. Air
c. Insects d. Worms

1481. Pollination occurs in:
a. Bryophytes and angiosperms
b. Angiosperms and pteridophytes
c. Angiosperms and gymnosperms
d. Angiosperms and fungi

1482. Entomophilous flowers are:
a. colour less b. large
c. large, coloured , showy and stunted d. small

1483. Ornithophilly is pollination by:
a. Humans b. Wind
b. Birds d. Bats

1484. Chief pollinators of agricultural crops are:
a. Butterflies b. Bees
c. Moths d. Beetles

1485. Cross pollination is:
a. Autogamy b. Allogamy
c. chasmogamy d. Cleistogamy

1486. Dominance of angiosperms can be considered due to evolution of:
a. Seed b. Fruit
c. Vascular system d. Extensive root system

1487. Fruit is a:
a. Post fertilization product of pistil b. Product of flower
b. Body having seeds d. Product of ovary

1488. A true fruit is formed from:
a. Ovary b. Ovary and thalamus
c. Ovary and calyx d. Ovary and receptacle

1489. A true fruit is:
a. developed ovule
b. Developed ovary
b. fertilized and developed ovary
d. fertilized and developed ovule

1490. An accessory fruit is the one which develops from:
a. An ovary b. Ovary and thalamus
c. Unfertilized ovary d. Inflorescence

1491. Parthenocarp is fruit:
a. Formed from superior ovary and thalamus
b. Formed from inferior ovary
c. consisting of ripened ovary and thalamus
d. which doesn't posses seeds

1492. A false fruit is the one which develops from:
a. single flower
b. single flower having attached parts along with ovary
c. Inflorescence
d. parts of an ovary

1493. Seed is :
a. developed ovule b. fertilized and developed ovule
c. Developed ovary d. fertilized and developed ovary

1494. The seed bearing plants belong to the group:
a. Pteridophytes b. Bryophytes
c. Vascular Cryptogams d. Phanerogams

1495. Which is not essential for seed germination in most cases:
a. O2 b. Light
c. Suitable temperature d. Moisture

1496. Part of the seed which forms the shoot of the time of germination is:
a. Radicle b. Cotyledons

c. Epicotyl d. Plumule

1497. Vivipary is seed germination:
a. in storng light
b. without involving cotyledons
c. with cotyledons coming above the ground
d. while contained inside the fruits

1498. Seeds coats develop from:
a. Ovule b. Embryosac
c. Integuments d. Chalaza

1499. Seeds are products of sexual reproduction because they:
a. give rise to new plants
b. have variability
c. are formed by fusion and gametes
d. are formed by fusion of

1500. Oil is stored in the endosperm is:
a. Groundnut b. Soyabean
c. Cashewnut d. Coconut

1501. The chief function of bile is:
a. Emulsification of fats for digestion
b. To regulate the process of digestion
c. To digest fat by enzymatic activity
d. To remove waste products

1502. The muscular contractions of stomach are called:
a. Absorption b. Digestion
c. Circulation d. Peristalsis

1503. The pylorus in frog is found between:
a. Oesophagus b. Ileum and colon
c. stomach and duodenum d. Duodenum ileum

1504. Lower jaw of frog are:
a. Heterodont b. Homodont
c. Monophydont d. None

1505. The teeth of frog have:
a. one row of teeth b. two rows of teeth
c. three teeth d. No teeth

1506. In frog pancreas produces:
a. 3 digestive enzymes and 2 hormones
b. 3 digestive enzymes and 1 hormones
c. 3 digestive enzymes and 3 hormones
d. 2 digestive enzymes and 3 hormones

1507. The animal feeding on its own excreta is called:
a. Microphagous b. Macrophagus
c. Omnivorous d. Coprophagus

1508. Vermiform appendix is a part of:
a. Nervous system b. Alimentary canal
c. vascular canal d. Reproductive system

1509. A frog must swallow air if the lungs are to be expanded. This is connected with the fact that frog:
a. has no vagus nerves b. has no diaphragm
c. Relatively low form of life d. Normally breathes

1510. Breathing centre lies in:
a. Mid brain b. Medulla oblongata
c. Cerebellum d. Cerebral hemispheres

1511. In frog, glottis is controlled by muscles of:
a. Vocal cords b. Sternum
c. Arytenoid cartilages d. Pectoral girdles

1512. During aestivation frog respires by:
a. Skin b. The bucco - pharyngeal cavity
c. the lungs d. partly by skin and partly by lungs

1513. the lungs of frog also acts as:
a. Airostatic organ b. Hydrostatic organ
c. thermostatic organ d. all

1514. Inspiration in frog caused due to:
a. Suction force cause by bucco- pharyngeal cavity
b. Force pump action of bucco- pharyngeal cavity
c. Suction force provided by abdominal wall
d. Elasticity of the lungs

1515. Chordea tendinae are found in:
a. Joints b. Auricles of heat
c. Interstitial fluid d. Ventricles of heart

1516. Valves are found in veins to check back flow of blood flowing under:
a. low pressure b. High pressure
c. Atmospheric pressure d. No pressure

1517. Interchange of materials in the tissues occurs between:
a. Blood and lymph b. Blood capillaries and tissues cells

c. Lymph and tissue fluid d. Veins and tissue cells

1518. The pylangium and synangium in frog's heart is marked by:
a. 1st row of semilunar valves
b. 2nd row of semilunar valves
c. spiral valve
d. Sinu- atrial valve

1519. Carotid labyrinth:
a. Controls flow of blood in carotid arch
b. controls the concentration of oxygen
c. detects the pressure of respiratory gases in the blood
d. Detects the pressure of Co2 in blood

1520. Sinus venosus receives:
a. Two caval veins b. three caval veins
c. four caval veins d. sometimes four caval veins

1521. RBCs of frog are:
a. with nucleus b. without nucleus
c. many nucleate d. None

1522. Anterior abdominal vein in frog is formed by the union of:
a. Right and left sciatic veins
b. Right and left pelvic veins
c. right and left dorso-lumbar veins
d. right and left femoral veins

1523. Role of spleen in mammals is:
a. To assist lever b. to control blood pressure
c. to assists kidneys d. to act as haematopoetic tissues

1524. IX carnial nerve of frog is named:
a. Trochlear b. Oculomotor
c. Glossopharyngeal d. Trigeminal

1525. The cavity within the spinal cord is:
a. Blastocoel b. enterocoel
c. Nuerocoel d. Schizocoel

1526. Which is correct for nerves of frog?
a. all spinal nerves are motor
b. all cranial nerves are sensory
c. all spinal nerves are mixed
d. all cranial nerves are mined

1527. Which cranial nerves are purely sensory?
a. I, II, and VIII b. I, II, IV
c. I, VI, VII d. None of the above

1528. Number of cranial nerves in frog is:
a. only 10 b. 2 pairs
c. only 12 d. 10 Pairs

1529. The facial cranial nerve of frog is connected with:
a. Geniculate ganglion b. Gasserian ganglion
c. Both d. None

1530. In frog which parts of the following constituted in relencephalin?
a. Medulla oblongata and cerebellum
b. Posterior and anterior choroids
c. cerebrum and olfactory lobes
d. epithalamus and cerebrum Plenus

1531. The brain is:
a. Ectodermal b. Ecto – mesodermal
c. Mesodermal d. Endodermal

1532. Third ventricles are found in:
a. Heart of frog b. Heart of rabbit
c. Brain of rabbit d. Kidney of mammal

1533. How many pairs of sensory cranial nerves are found in mammals?
a. 2 b. 3
c. 4 d. 5

1534. The cranial nerve which is longest and supplies other regions of the body than head is:
a. Oculomotor b. Auditory
c. Trochlear d. Vagus

1535. Which nerves originates from medulla?
a. VIIIth b. Xth
c. IInd d. III rd

1536. Synapse is a gap between adjacent
a. nerves cells b. Muscle cells
c. Nerve cells and many other cells d. Muscle fibres

1537. On removing the thyroid from tadpole in frog, it will
a. die immediately b. remain tadpole throughout life
c. grows fast d. changes into adult

1538. Development of a fertilized egg starts from:
a. Cleavage b. Invagination

c. Fragmentation d. Regeneration

1539. Full grown tadpole of frog breathes by means of:
a. skin and gills b. lungs
c. Skin and lungs d. Gills

1540. A tadpole is
a. Omnivorous b. Predaceous
c. Carnivorous d. Herbivorous

1541. During, metamorphosis, the tail of tadpole gets:
a. Broken off b. Reabsorbed
c. Dries up and falls off
d. Pinched off and eaten up by other tadpoles

1542. Which of the following when added to water, will accelerate the rate of metamorphosis in tadpoles:
a. Chloride b. Fluorine
c. Bromine d. Iodine

1543. Which system does not undergo any special change during metamorphosis of frog's tadpole:
a. Respiratory b. Circulatory
c. Digestive d. Nervous

1544. Which marks the commencement of diploid phase?
a. Megaspore b. Microspore
c. Embryo d. Zygote

1545. Vascular system and excretory organs are developed from:
a. Mesoderm b. Ectoderm
c. Endoderm d. None of these

1546. How many sperms and ova will be produced from 25 primary spermatocytes and 25 primary oocytes respectively?
a. 100 sperms and 50 ova b. 100 sperm and 25 ova
c. 100 sperms and 100 ova d. 250 sperms and 50 ova

1547. Major nitrogenous waste product in rabbit and other mammals is:
a. Urea b. Uric acid
c. Amino acids d. ammonia

1548. Mammalian eggs have:
a. No yolk b. Large amount of yolk
c. Little yolk d. None of these

1549. Which of these animals has an endoskeleton and exoskeleton?
A. Cockroach b. Frog
c. snake d. Earthworm

1550. Skull bone of frog are joined to each other by;
a. Gliding joints b. Saddle joints
c. Immovable joints d. Imperfect joints

1551. Vertebrae of frog are generally procoelus except:
a. 8^{th} b. 8^{th} and 9^{th}
c. 9^{th} and 10^{th} d. 9^{th}

1552. Olecranon process is found in:
a. distal end of ulna b. Proxinal end of ulna
c. proxinal end of fibia d. Proximal end of humerus

1553. Number of bones in the lower jaw of frog is:
a. 6 b. 3
c. 4 d. 8

1554. Humerus differs from femur in having a:
a. deltoid ridge b. glenoid cavity
c. sigmoid notch d. spine

1555. The digital formula for the hind limb of frog is:
a. 0,2,2,33 b. 2,2,3,4,3
c. 1,2,2,3,3 d. 1,2,3,4,3

1556. Y shaped bone is:
a. squamosal b. quadrato-jugal
c. Palatine d. Pterygoid

1557. Cradle of human evolution is:
a. Asia b. Australia
c. Africa d. Central America

1558. Ramapithecus was discovered in:
a. China b. Java
c. Australia d. India

1559. The 1^{st} ancestor of man who walked erect was:
a. peking man b. Cro-magnon
c. Australopithecus d. Java apeman

1560. Living organism originated from living is the main theme of:
a. theory of special creativity
b. theory of catastrophism
c. Theory of eternity
d. Theory of spontaneous generation

1561. Vegetation of a place is mainly determined by:

a. Rainfall b. Soil water
c. soil type d. Amount of light

1562. River water deposits:
a. Loamy soil b. Alluvial soil
c. Laterite soil d. Sandy soil

1563. Soil particles arranged in a series of increasing size:
a. Silt – sandy – clay b. sand – silt – clay
c. clay – sand – silt d. clay – silt – sand

1564. Least porous soil is:
a. Clay soil b. sandy soil
c. Loam soil d. Gravelly soil

1565. Best source of renewable energy is:
a. cattle b. petroleum
c. Coal d. trees

1566. A non renewable resource is:
a. forest b. coal/ petroleum
c. water d. wildlife

1567. Soil erosion is prevented by:
a. afforestation b. increased bird pollution
c. Over grazing d. Removal of vegetation

1568. Terracing helps in soil conservation is:
a. Plains b. Deserts
b. Hilly areas d. Wet areas

1569. Soil rich in soluble salts is:
a. Halomorphic b. Calcimorphic
c. Laterite d. None of the above

1570. The biological amplification of DDT in the various trophic levels is known as:
a. Green house effect b. Biomagnification
c. Eutrophication d. pollution

1571. Smog is produced due to:
a. Air and metal dust b. water and nitrogen oxide
c. Smoke and fog d. none of the above

1572. Fertilizers, pesticides and insecticides may cause:
a. Air pollution b. Water pollution
c. Both a and b d. None of the above

1573. Gas released in Bhopal tragedy was:
a. MIC (Methyl isocyanate) b. $COCl_2$
c. Phosgene d. None of the above

1574. A colourless, non irritant highly toxic gas that impairs respiration is:
a. So_2 b. No_2
c. Co_2 d. Co

1575. Pollutant likely to deplete ozone layer is:
a. Co b. Nitrogen oxides
c. Chlorofluoro carbons d. Both b and c

1576. Acid rain is caused by:
a. excess production of coal gas
b. Excess release of Co_2 due to increasing combustion and respiration
c. Excess release of So_2 and No_2 from burning fossil fuels
d. Excess production of gaseous hydrocarbons

1577. So_2 pollution is indicated by destruction of:
a. Climbers b. Lichens
c. Mosses d. Grasses

1578. Domestic waste is:
a. Effluent b. Biodegradable
c. Non biodegradable d. Air pollutant

1579. Inadequate drainage in a soil will lead to:
a. Floods b. Soil erosion
c. Aridity d. Salination

1580. Most significant attribute of noise is its:
a. duration b. unpleasant nature
c. loudness d. frequency

1581. Loud noise causes:
a. Irritation b. Irrationality
c. Impairment of hearing d. Dilation of vessels

1582. Disease aggravated by pollution is:
a. Scurvy b. Rheumatism
c. Haemophilia d. Bronchitis

1583. Atmosphere of big cities is polluted most by:
a. automobile exhausts b. Pesticide residue
c. Household waste d. Radio – active fall out

1584. Which is not a pollutant normally?
a. Hydrocarbons b. Carbon dioxide

c. carbon monoxide d. Sulphur dioxide

1585. SO_2 and NO_2 produce pollution by increasing:
a. Alkalinity b. Acidity
c. Neutrality d. Buffer action

1586. Spraying of DDT produces pollution of:
a. Air b. Air and water
c. Air and soil d. Air, water and soil

1587. Most abundant water pollutant is:
a. Detergents b. Pesticides
c. Industrial wastes d. ammonia

1588. Atmospheric pollutant is:
a. Co_2 b. Co
c. O_2 d. N_2

1589. Which of the following forms a toxic substance in blood by combining with hemoglobin?
a. Co_2 b. Co
c. O_2 d. CH_4

1590. The most polluted city of the world is:
a. New York b. Tokyo
c. Mexico d. Calcutta

1591. Noise pollution is measured in:
a. Hertz b. Fathoms
c. Nanometres d. Decibles

1592. Most hazardous metal pollutant of automobile exhausts is:
a. Mercury b. Cadmium
c. Lead d. Copper

1593. Smog occurs in places of:
a. Excess So_2 b. Low temperature
c. High temperature d. excess NH_3

1594. Acid rain is due to increase in atmospheric concentration of:
a. Ozone and dust b. Co_2 and Co
c. So_3 and CO d. So_2 and NO_2

1595. Major pollution causing agent is:
a. Hydrocarbons b. Animals
c. Man d. None of above

1596. Ultimate environmental hazard to mankind is due to:
a. nuclear pollution b. water pollution
c. Air pollution d. Noise pollution

1597. Lead is:
a. Air pollutant b. soil pollutant
c. Radioactive pollutant d. Noise pollutant

1598. Sound becomes hazardous noise pollution at level:
a. Above 30db b. above 80 d b
c. Above 100 d b d. above 120 d b

1599. BOD is:
a. Biological oxygen deficit
b. Biological oxygen demand
c. Biosphere oxygen demand
d. None of above

1600. Biodegradable pollutant is:
a. plastic b. Asbestos
c. Sewage d. Mercury

Best of Luck

ANSWER SHEET

S.n.	*Ans*	*S.n.*	*Ans*	*S.n.*	*Ans*
1	b	28	a	55	a
2	d	29	d	56	c
3	c	30	d	57	a
4	c	31	b	58	a
5	a	32	b	59	c
6	b	33	a	60	d
7	b	34	a	61	c
8	c	35	a	62	b
9	c	36	d	63	c
10	a	37	d	64	c
11	d	38	c	65	d
12	c	39	c	66	b
13	a	40	b	67	b
14	b	41	c	68	b
15	b	42	a	69	d
16	a	43	d	70	a
17	c	44	c	71	d
18	d	45	c	72	d
19	d	46	a	73	c
20	d	47	b	74	d
21	a	48	a	75	a
22	a	49	d	76	c
23	c	50	a	77	c
24	d	51	b	78	d
25	a	52	d	79	a
26	d	53	c	80	a
27	b	54	d	81	b
82	c	111	c	140	a
83	a	112	b	141	a
84	c	113	c	142	c
85	b	114	c	143	c
86	c	115	c	144	d
87	a	116	a	145	b
88	d	117	a	146	b
89	b	118	c	147	a
90	c	119	c	148	b
91	b	120	c	149	b
92	d	121	b	150	d
93	c	122	a	151	b
94	b	123	d	152	a
95	d	124	a	153	d
96	b	125	b	154	d
97	c	126	a	155	a
98	b	127	c	156	a
99	a	128	c	157	a
100	b	129	d	158	c
101	d	130	a	159	a
102	c	131	b	160	b
103	a	132	a	161	d
104	c	133	a	162	b
105	a	134	c	163	a
106	c	135	b	164	d
107	b	136	a	165	a
108	b	137	b	166	c
109	d	138	d	167	d
110	b	139	b	168	c

169	d	198	b	227	b
170	b	199	b	228	c
171	c	200	c	229	c
172	a	201	b	230	a
173	c	202	b	231	d
174	d	203	b	232	a
175	a	204	c	233	c
176	c	205	b	234	b
177	b	206	b	235	c
178	d	207	c	236	c
179	d	208	a	237	b
180	a	209	b	238	a
181	c	210	b	239	b
182	c	211	a	240	b
183	c	212	a	241	a
184	d	213	d	242	a
185	d	214	d	243	a
186	d	215	d	244	a
187	a	216	d	245	d
188	c	217	c	246	d
189	c	218	c	247	c
190	c	219	b	248	d
191	b	220	a	249	b
192	b	221	a	250	d
193	d	222	c	251	a
194	d	223	b	252	b
195	b	224	a	253	a
196	d	225	c	254	c
197	a	226	c	255	b
256	b	285	a	314	d
257	c	286	c	315	a
258	d	287	b	316	b
259	c	288	b	317	d
260	b	289	a	318	c
261	b	290	c	319	b
262	a	291	d	320	a
263	b	292	b	321	c
264	d	293	a	322	c
265	c	294	b	323	c
266	c	295	b	324	b
267	b	296	a	325	b
268	a	297	a	326	a
269	c	298	b	327	b
270	a	299	a	328	b
271	c	300	c	329	b
272	a	301	d	330	b
273	c	302	d	331	b
274	a	303	a	332	a
275	b	304	a	333	d
276	b	305	a	334	d
277	b	306	a	335	d
278	b	307	c	336	a
279	a	308	c	337	c
280	a	309	b	338	b
281	c	310	c	339	b
282	b	311	d	340	c
283	c	312	d	341	b
284	a	313	b	342	c

343	b	372	a	401	b
344	a	373	c	402	a
345	d	374	a	403	a
346	d	375	a	404	a
347	c	376	d	405	d
348	a	377	a	406	b
349	c	378	a	407	c
350	a	379	d	408	b
351	c	380	b	409	c
352	b	381	a	410	a
353	c	382	d	412	c
354	c	383	b	413	d
355	b	384	a	414	d
356	a	385	c	415	c
357	c	386	b	416	c
358	a	387	c	417	b
359	a	388	b	418	a
360	b	389	a	419	b
361	b	390	d	420	a
362	d	391	a	421	c
363	a	392	d	422	a
364	b	393	b	423	b
365	a	394	b	424	b
366	a	395	a	425	b
367	b	396	b	426	a
368	d	397	a	427	c
369	a	398	d	428	d
370	d	399	c	429	c

430	b	459	b	488	c
431	a	460	c	489	c
432	c	461	c	490	b
433	b	462	a	491	a
434	c	463	d	492	d
435	b	464	c	493	d
436	a	465	b	494	a
437	c	466	b	495	a
438	a	467	c	496	c
439	d	468	b	497	c
440	d	469	b	498	c
441	c	470	a	499	d
442	d	471	a	500	c
443	d	472	c	501	c
444	b	473	b	502	b
445	c	474	c	503	b
446	a	475	b	504	b
447	d	476	c	505	b
448	d	477	c	506	b
449	a	478	a	507	d
450	b	479	d	508	a
451	b	480	c	509	b
452	b	481	c	510	b
453	c	482	c	511	d
454	a	483	d	512	a
455	b	484	a	513	d
456	d	485	b	514	a
457	a	486	c	515	a
458	a	487	d	516	c

517	b	546	a	575	d
518	a	547	d	576	d
519	d	548	c	577	a
520	c	549	d	578	b
521	b	550	c	579	d
522	a	551	c	580	c
523	a	552	b	581	b
524	b	553	d	582	d
525	b	554	b	583	b
526	c	555	d	584	b
527	d	556	a	585	b
528	a	557	a	586	c
529	c	558	a	587	b
530	d	559	d	588	c
531	c	560	a	589	d
532	c	561	c	590	c
533	d	562	b	591	d
534	a	563	a	592	a
535	d	564	c	593	d
536	d	565	b	594	a
537	d	566	c	595	b
538	b	567	d	596	c
539	b	568	b	597	c
540	a	569	d	598	a
541	b	570	b	599	a
542	c	571	a	600	d
543	d	572	c	601	d
544	d	573	b	602	a
545	c	574	b	603	d

604	b	633	a	662	d
605	d	634	a	663	d
606	d	635	d	664	d
607	a	636	d	665	c
608	a	637	b	666	a
609	c	638	a	667	b
610	a	639	b	668	c
611	a	640	d	669	c
612	d	641	c	670	a
613	a	642	c	671	a
614	d	643	c	672	b
615	c	644	b	673	d
616	d	645	a	674	d
617	c	646	a	675	c
618	c	647	d	676	a
619	a	648	c	677	c
620	b	649	b	678	b
621	c	650	a	679	d
622	b	651	d	680	d
623	d	652	a	681	d
624	b	653	a	682	d
625	a	654	c	683	a
626	c	655	c	684	b
627	a	656	d	685	c
628	c	657	c	686	a
629	b	658	a	687	a
630	a	659	d	688	a
631	b	660	b	689	b
632	c	661	c	690	C

691	b	719	d	748	a
692	b	720	b	749	c
693	a	721	d	750	d
694	b	722	d	751	b
695	c	723	b	752	d
696	b	724	a	753	b
697	a	725	b	754	a
698	d	726	a	755	a
699	a	727	c	756	c
700	d	728	d	757	c
701	b	729	c	758	c
702	b	730	d	759	c
703	b	731	b	760	c
704	d	732	a	761	d
705	d	733	c	762	c
706	d	734	a	763	d
707	d	735	a	764	c
708	a	736	b	765	c
709	b	737	d	766	a
710	b	738	a	767	d
711	a	739	c	768	d
712	a	740	c	769	c
713	c	741	c	770	a
714	c	742	b	771	b
715	d	743	a	772	d
716	b	744	a	773	d
717	b	745	c	774	a
718		746	b	775	c
719		747	a	776	a

777	d	806	d	835	b
778	a	807	d	836	d
779	c	808	c	837	b
780	c	809	b	838	d
781	c	810	d	839	d
782	c	811	a	840	b
783	c	812	a	841	a
784	d	813	b	842	c
785	c	814	c	843	d
786	b	815	a	844	a
787	b	816	c	845	d
788	b	817	c	846	a
789	c	818	a	847	a
790	b	819	d	848	a
791	b	820	c	849	a
792	c	821	b	850	b
793	b	822	c	851	b
794	a	823	a	852	a
795	c	824	c	853	c
796	a	825	c	854	c
797	c	826	d	855	c
798	d	827	d	856	a
799	a	828	b	857	c
800	c	829	c	858	c
801	b	830	c	859	c
802	b	831	a	860	b
803	a	832	b	861	b
804	c	833	d	862	d
805	d	834	a	863	b

864	a	893	c	922	a
865	a	894	b	923	d
866	a	895	b	924	c
867	b	896	d	925	b
868	d	897	d	926	c
869	a	898	a	927	b
870	c	899	c	928	b
871	c	900	d	929	c
872	b	901	b	930	b
873	b	902	b	931	c
874	c	903	c	932	a
875	a	904	b	933	a
876	c	905	b	934	c
877	a	906	b	935	c
878	d	907	a	936	c
879	a	908	c	937	c
880	b	909	d	938	a
881	c	910	c	939	a
882	a	911	b	940	d
883	b	912	b	941	d
884	b	913	d	942	b
885	b	914	b	943	d
886	b	915	b	944	a
887	b	916	d	945	c
888	b	917	a	946	d
889	b	918	a	947	c
890	b	919	c	948	d
891	b	920	c	949	c
892	d	921	d	950	b

951	a	980	b	1009	d
952	a	981	b	1010	a
953	c	982	d	1011	b
954	d	983	a	1012	b
955	b	984	d	1013	c
956	c	985	b	1014	d
957	d	986	a	1015	b
958	a	987	c	1016	d
959	d	988	b	1017	c
960	a	989	c	1018	b
961	b	990	d	1019	b
962	b	991	d	1020	b
963	c	992	c	1021	c
964	a	993	b	1022	c
965	c	994	b	1023	a
966	a	995	d	1024	a
967	d	996	c	1025	b
968	b	997	d	1026	b
969	d	998	b	1027	d
970	c	999	a	1028	d
971	b	1000	b	1029	a
972	b	1001	c	1030	c
973	b	1002	b	1031	c
974	d	1003	b	1032	d
975	b	1004	c	1033	a
976	b	1005	b	1034	c
977	b	1006	c	1035	d
978	a	1007	b	1036	c
979	c	1008	c	1037	b

1038	b	1067	b	1096	b
1039	a	1068	a	1097	b
1040	c	1069	b	1098	b
1041	c	1070	d	1099	a
1042	d	1071	b	1100	c
1043	c	1072	c	1101	a
1044	a	1073	b	1102	c
1045	c	1074	b	1103	a
1046	d	1075	d	1104	d
1047	d	1076	c	1105	c
1048	d	1077	a	1106	c
1049	d	1078	b	1107	d
1050	c	1079	d	1108	d
1051	a	1080	c	1109	d
1052	a	1081	c	1110	d
1053	b	1082	c	1111	b
1054	b	1083	a	1112	c
1055	d	1084	d	1113	c
1056	b	1085	a	1114	d
1057	c	1086	a	1115	c
1058	c	1087	a	1116	a
1059	c	1088	a	1117	b
1060	d	1089	d	1118	b
1061	d	1090	a	1119	d
1062	d	1091	b	1120	c
1063	d	1092	a	1121	b
1064	d	1093	a	1122	d
1065	c	1094	c	1123	c
1066	b	1095	b	1124	d
1126	d	1155	a	1184	b
1127	c	1156	d	1185	a
1128	c	1157	d	1186	c
1129	a	1158	a	1187	d
1130	b	1159	b	1188	a
1131	b	1160	c	1189	d
1132	a	1161	b	1190	c
1133	a	1162	d	1191	c
1134	c	1163	d	1192	b
1135	b	1164	d	1193	c
1136	d	1165	c	1194	a
1137	c	1166	c	1195	c
1138	b	1167	a	1196	c
1139	a	1168	a	1197	b
1140	d	1169	b	1198	d
1141	c	1170	b	1199	b
1142	c	1171	b	1200	d
1143	b	1172	a	1201	b
1144	d	1173	a	1202	a
1145	d	1174	d	1203	a
1146	c	1175	b	1204	c
1147	b	1176	b	1205	c
1148	c	1177	a	1206	a
1149	c	1178	a	1207	d
1150	d	1179	a	1208	d
1151	b	1180	c	1209	b
1152	a	1181	b	1210	a
1153	b	1182	a	1211	a
1154	c	1183	c	1212	d

1213	b	1242	b	1271	a
1214	c	1243	d	1272	b
1215	b	1244	b	1273	c
1216	d	1245	d	1274	b
1217	d	1246	a	1275	d
1218	b	1247	d	1276	c
1219	a	1248	a	1277	c
1220	d	1249	c	1278	d
1221	d	1250	b	1279	d
1222	a	1251	a	1280	d
1223	b	1252	c	1281	b
1224	b	1253	d	1282	d
1225	c	1254	a	1283	a
1226	b	1255	b	1284	b
1227	d	1256	c	1285	c
1228	c	1257	b	1286	d
1229	d	1258	a	1287	b
1230	d	1259	b	1288	c
1231	a	1260	a	1289	d
1232	c	1261	c	1290	b
1233	d	1262	a	1291	c
1234	c	1263	d	1292	a
1235	a	1264	c	1293	c
1236	b	1265	a	1294	b
1237	d	1266	d	1295	d
1238	b	1267	c	1296	a
1239	d	1268	b	1297	b
1240	b	1269	a	1298	b
1241	a	1270	c	1299	a

1300	d	1328	a	1357	c
1301	b	1329	b	1358	b
1302	a	1330	d	1359	c
1303	b	1331	a	1360	d
1304	c	1332	a	1361	c
1305	c	1333	d	1362	c
1306	c	1334	c	1363	a
1306	c	1335	a	1364	b
1307	b	1336	d	1365	b
1308	c	1337	b	1366	b
1309	c	1338	a	1367	c
1310	d	1339	c	1368	d
1311	d	1340	d	1369	c
1312	a	1341	a	1370	b
1313	c	1342	d	1371	c
1314	d	1343	b	1372	a
1315	a	1344	b	1373	c
1316	b	1345	a	1374	a
1317	c	1346	d	1375	c
1318	b	1347	c	1376	c
1319	c	1348	b	1377	d
1320	b	1349	a	1378	b
1321	b	1350	d	1379	d
1322	c	1351	b	1380	d
1323	b	1352	a	1381	c
1324	a	1353	b	1382	b
1325	a	1354	c	1383	a
1326	c	1355	a	1384	a
1327	c	1356	c	1385	a

1386	a	1415	b	1444	c
1387	a	1416	a	1445	a
1388	b	1417	b	1446	c
1389	d	1418	a	1447	b
1390	c	1419	a	1448	a
1391	a	1420	c	1449	c
1392	b	1421	a	1450	b
1393	d	1422	d	1451	d
1394	a	1423	b	1452	c
1395	c	1424	b	1453	c
1396	d	1425	d	1454	a
1397	a	1426	a	1455	c
1398	a	1427	c	1456	c
1399	b	1428	a	1457	c
1400	b	1429	b	1458	d
1401	d	1430	a	1459	c
1402	a	1431	a	1460	b
1403	c	1432	b	1461	d
1404	c	1433	c	1462	a
1405	d	1434	b	1463	a
1406	d	1435	c	1464	a
1407	a	1436	c	1465	c
1408	b	1437	b	1466	b
1409	c	1438	c	1467	c
1410	a	1439	a	1468	a
1411	d	1440	b	1469	b
1412	b	1441	b	1470	b
1413	b	1442	a	1471	d
1472	c	1500	c	1529	b
1473	b	1501	a	1530	c
1474	b	1502	d	1531	a
1475	d	1503	c	1532	c
1476	a	1504	d	1533	b
1477	a	1505	d	1534	d
1478	b	1506	b	1535	b
1479	a	1507	d	1536	a
1480	b	1508	b	1537	b
1481	c	1509	b	1538	a
1482	c	1510	b	1539	d
1483	c	1511	c	1540	d
1484	b	1512	a	1541	b
1485	b	1513	b	1542	d
1486	b	1514	b	1543	d
1487	d	1515	b	1544	d
1488	a	1516	a	1545	a
1489	c	1517	b	1546	b
1490	c	1518	b	1547	a
1491	d	1519	c	1548	c
1492	b	1520	b	1549	c
1493	b	1521	a	1550	a
1494	d	1522	b	1551	b
1495	b	1523	d	1552	b
1496	d	1524	c	1553	a
1497	d	1525	c	1554	a
1498	c	1526	c	1555	b
1499	c	1527	a	1556	d
		1528	d	1557	C

1558	d	1587	c
1559	c	1588	b
1560	d	1589	b
1561	a	1590	c
1562	b	1591	d
1563	d	1592	c
1564	a	1593	a
1565	d	1594	d
1566	b	1595	c
1567	a	1596	a
1568	b	1597	a
1569	a	1598	d
1570	b	1599	b
1571	c	1600	c
1572	c		
1573	a		
1574	d		
1575	c		
1576	c		
1577	b		
1578	b		
1579	d		
1580	c		
1581	c		
1582	d		
1583	a		
1584	b		
1585	b		
1586	d		