

CHAPTER 3: PLANT KINGDOM

ONE MARK QUESTIONS:

1. Why it is not acceptable to consider vegetative characters for plant classification? (K)
2. Which system of classification assumed that organisms belonging to the same taxa have a common ancestor? (K)
3. What is cytotaxonomy? (K)
4. What is chemotaxonomy? (K)
5. What is numerical taxonomy? (K)
6. What are algae? (K)
7. What are kelps? (K)
8. What is the basis of classification of algae? (K)
9. Give an example for filamentous alga. (K)
10. Give an example for unicellular alga? (K)
11. Give an example for colonial alga? (K)
12. How do algae reproduce vegetatively? (K)
13. Name the most common asexual reproductive structure in algae. (K)
14. What are zoospores? (K)
15. Name an algal genus that shows both Isogamous and Anisogamous condition. (K)
16. Why *Chlorella* and *Spirulina* are used by space travelers? (K)
17. What are pyrenoids? (K)
18. Which class of algae is known as brown algae? (K)
19. Give an example for brown algae. (K)
20. How are brown algae attached to the substratum? (K)
21. What is the name given to leaf like photosynthetic organ in the plant body of Phaeophyceae? (K)
22. Name the substance that covers the cell wall of vegetative cells in brown algae. (K)
23. Which class of algae produces biflagellated pear shaped zoospores? (K)
24. What do you mean by pyriform gametes? (K)
25. Name the predominant pigment in red algae. (K)
26. Which class of algae is known as red algae? (K)
27. Name the type of food substance that is stored in red algae. (K)
28. In which group of algae, both spores and gametes are non-motile? (K)
29. Which group of algae shows only Oogamous type of sexual reproduction? (K)
30. Give an example for red algae. (K)
31. Which product of algae is used in the preparation of ice-creams and jellies? (K)
32. Why bryophytes are called Amphibians of plant kingdom? (K)
33. Which is the dominant phase in the life cycle of bryophytes? (K)
34. What is the ploidy of thallus in bryophytes? (K)
35. Why gametophyte is called so? (K)
36. Name the first stage of gametophyte development in mosses. (K)
37. Name the male sex organ in bryophytes. (K)
38. Name the female sex organ in bryophytes. (K)
39. Name the moss that provides peat. (K)
40. What are gemmae? (K)
41. In the sporophyte of mosses where does meiosis take place? (K)
42. How do mosses help in colonization of higher plants? (K)
43. Which are the first terrestrial plants to possess vascular tissues? (K)

44. What is the evolutionary significance of pteridophytes? (K)
45. Which is the dominant phase in the life cycle of pteridophytes? (K)
46. What are sporophylls? (K)
47. Name the male sex organ in pteridophytes. (K)
48. Name the female sex organ in pteridophytes. (K)
49. What is prothallus? (K)
50. Which type of cell division precedes formation of spores in plants? (K)
51. Why are pteridophytes restricted to narrow geographical regions? (K)
52. What is homosporous condition? (K)
53. What is heterosporous condition? (K)
54. Give an example for heterosporous pteridophyte. (K)
55. Which group of plants showed an event which is known to be a precursor to seed habit in plant kingdom? (K)
56. Why are gymnosperms called as naked seeded plants? (K)
57. What are coralloid roots? (K)
58. What is the significance of coralloid roots in *Cycas*? (K)
59. Which organism is associated with roots of *Cycas* to form coralloid roots? (K)
60. Name the gymnosperm that shows mycorrhiza. (K)
61. Name one of the tallest tree species among gymnosperms. (K)
62. How many megaspores remain functional in each ovule of the spermatophytes? (K)
63. Which is the smallest angiosperm?
64. Why the cells of embryo sac in angiosperms are haploid? (K)
65. Give an example for microscopic flowering plant. (K)
66. What is an embryo sac in angiosperms? (K)
67. How is secondary nucleus of the embryo sac formed? (K)
68. What is syngamy? (K)
69. What does PEN in angiosperms would develop into? (K)
70. What is the pattern of life cycle shown by seed bearing plants? (K)
71. Which group of plants exhibit haplo-diplontic life cycle? (K)
72. Mention an alga that exhibits haplo-diplontic life cycle. (K)
73. Which alga shows diplontic life cycle? (K)
74. Which cell represents the beginning of sporophytic stage of plants' life cycle? (K)
75. Both gymnosperms and angiosperms bear seeds, then why are they classified separately? (K)
76. Mention the ploidy of the following (K)
 - a. Protonemal cell of a moss
 - b. Primary endosperm nucleus in dicot
 - c. Leaf cell of a moss
 - d. Prothallus cell of a fern
 - e. Gemma cell in *Marchantia*
 - f. Meristem cell of monocot
 - g. Ovum of a liverwort
 - h. Zygote of a fern
77. Which is the male sex organ in flower? (K)
78. What is the function of endosperm in seeds? (K)
79. Name the only diploid structure in plants showing haplontic life cycle. (K)
80. Which pattern of life cycle is shown by seed bearing plants? (K)

TWO MARK QUESTIONS:

81. What were the basis/criteria for classification in Linnaeus's system? (K)
82. What were the drawbacks of artificial system of plant classification? (K)
83. Define a) Cytotaxonomy, b) Chemotaxonomy (K)
84. Give any two examples of organisms with which algae are found associated. (K)
85. List out the important pigments found in brown algae. (K)
86. List any four characters of rhodophyceae. (K)
87. Name any two commercially used hydrocolloids isolated from algae. (K)
88. Differentiate between Isogamous and Anisogamous condition. (U)
89. Write any two economic importances of bryophytes. (K)
90. What are the two stages in the gametophytic phase of mosses? (K)
91. Mention the four classes of pteridophytes. (K)
92. Differentiate between thallus of bryophytes and prothallus of pteridophytes. (U)
93. How are leaves in gymnosperms adapted to withstand extremes of climatic factors? (K)
94. What are male gametophytes in gymnosperms called as? Where do they develop? (K)
95. Explain the heterosporous nature of gymnosperms. (U)
96. Which are the two classes of angiosperms? (K)
97. What do the following structures of angiosperms would develop into? (K)
 - a. Zygote
 - b. PEN
98. What is diplontic life cycle? Give an example. (K)
99. Explain briefly Protonema with suitable example showing it. (U)
100. Explain briefly Diplontic with suitable example showing it. (U)
101. Explain briefly Sporophyll with suitable example showing it. (U)
102. Explain briefly Isogamy with suitable example showing it. (U)
103. Differentiate between Red algae and brown algae (U)
104. Differentiate between Green algae and Red algae (U)
105. Differentiate between Liverworts and moss (U)
106. Differentiate between Homosporous and heterosporous pteridophyte (U)
107. Differentiate between Syngamy and triple fusion. (U)
108. What is haplo-diplontic life cycle? Name any two algae that follow such pattern of life cycle. (K)
109. Name the cells of the embryo sac that degenerate after fertilization. (K)
110. Briefly describe the structure of female strobilus in gymnosperms. (U)

THREE MARK QUESTIONS:

111. Mention the three classification system of angiosperms. (K)
112. Write a note on reproduction in algae. (K)
113. How are algae classified based on the fusion of gametes? (U)
114. Write a note on different classes of algae with reference to their flagellar number and position of insertions. (U)
115. Write any six important characteristics of Chlorophyceae. (K)
116. What are the characteristic features of brown algae? (K)
117. Write the important cell wall chemical and food storage substance in the following groups of algae. (K)
118. "Mosses are ecologically important group of plants". Justify. (U)
119. Write a note on alternation of generation in bryophytes. (U)
120. Draw a neat labeled diagram showing different parts of a moss plant *Funaria*. (S)

121. How does sexual reproduction take place in pteridophytes? (U)
122. What is an embryo sac in angiosperms? List out the different cells of the embryo sac. (K)
123. What is double fertilization? Define two events in it. (K)
124. Mention the different life cycle patterns in plants. (K)
125. Both bryophytes and pteridophytes exhibit haplo-diplontic life cycle, yet they differ. Justify.(U)
126. What is heterospory? Briefly comment on its significance. Give two examples. (K)

FIVE MARK QUESTIONS:

127. "Algae are useful to man in a variety of ways". Justify the statement with suitable examples.(U)
128. Describe the salient features of algae. (U)
129. Differentiate between Chlorophyceae and Rhodophyceae.(U)
130. Enumerate the important events in the life cycle of bryophytes. (K)
131. Describe the salient features of pteridophytes. (U)
132. Write an account of sporophytic generation in pteridophytes.(U)
133. Explain the life cycle of gymnosperms.(U)
134. List out the post-fertilization changes in angiosperms. (K)
135. What is alternation of generations? Name the two generations in plants' life cycle. Schematically represent different life cycle patterns in plants.(S)
136. When and where does reduction division take place in the life cycle of a liverwort, a moss, a fern, a gymnosperm and an angiosperm?(K)
137. Name the three groups of plants that bear archegonia.Briefly describe life cycle of any one of them (K)
138. Write a note on economic importance of algae (U)
139. Describe the important characteristics/salient features of gymnosperms.(U)
140. Summarize the life cycle of an angiosperm.(U)
141. Schematically represent the life cycle of angiosperms. (S)
142. Describe the salient features of angiosperms. (U)
143. Describe the salient features of Bryophytes (U)
144. Describe the salient features of Pteridophytes (U)
145. Describe the salient features of Algae(U)