

1. Define meristematic tissue and explain its classification based on origin and position. (5 Marks)
2. Compare the internal structure of a Dicot stem and a Monocot stem. (5 Marks)
3. Describe the formation of Periderm and the role of Lenticels. (5 Marks)
4. Explain the process of Double Fertilization and its significance. (5 Marks)
5. Discuss the Triphasic Life Cycle of *Polysiphonia*. (6 Marks)
6. Compare the fruiting bodies of *Peziza* and *Xylaria*. (6 Marks)
7. Describe the ultra-structure of a bacterial cell. (6 Marks)
8. Give a brief account of the preparation, and uses of Bordeaux mixture, and Tobacco decoction. (6 Marks)
9. Discuss the role of Bryophytes in ecological succession and soil formation. (5 Marks)
10. Highlight the key anatomical and reproductive features of *Selaginella*. (5 Marks)
11. '*Gnetum* is considered as an advanced Gymnosperm' Discuss. (5 Marks)
12. Describe various methods of fossilization and preservation of plant and animal remains. (5 Marks)
13. Explain the types of floral aestivation with illustrations. (5 Marks)
14. Discuss the merits and demerits of Bentham and Hooker's system of plant classification. (5 Marks)

15. Why is Orchidaceae considered as an advanced family among monocotyledons? (5 Marks)
16. Write the binomial name, family, morphology of the useful part and uses of source plant of rubber. (5 Marks)
17. Explain *in-situ* and *ex-situ* biodiversity conservation methods. (5 Marks)
18. Describe the stages of disaster management. (5 Marks)
19. Explain the morphological and anatomical adaptations of xerophytes. (6 Marks)
20. What are micronutrients for plants? What deficiency symptoms could be observed if they are not available in the soil? (5 Marks)
21. Differentiate between Cyclic and non-cyclic photophosphorylation. (5 Marks)
22. What is biological clock? Cite examples of biological clocks in plants. (5 Marks)
23. What are secondary metabolites? Why plants synthesis secondary metabolites? (5 Marks)
24. What are the components of the Chromosome? How it is organized into a structure that could be visible under a microscope during cell division? (6 Marks)
25. Explain the principle of Law of independent assortment. How it leads to the high variability of gametes formed during meiosis? (6 Marks)
26. Describe the structure B DNA. (6 Marks)

27. Explain the post transcriptional modifications of pre-mRNA in Eukaryotes. (6 Marks)
28. What is cytodifferentiation? Explain major chemical factors inducing cytodifferentiation during plant tissue culture. (5 Marks)
29. Explain various *in vivo* and *in vitro* methods of haploid production. (5 Marks)
30. Explain why restriction endonucleases are inevitable for recombinant DNA technology. (5 Marks)
31. What are Biolistics? Explain the major applications of Biolistics. (5 Marks)
32. Ikebana is a unique type of flower arrangement, justify. (5 Marks)
33. Explain the benefits of foliar spray. (5 Marks)
34. Explain the genetic basis of plant selection. (6 Marks)
35. Social and agroforestry in India enhances forest cover and help carbon sequestration, discuss. (5 Marks)
36. Explain significance of joint forest management program in India. (5 Marks)
37. Explain how RAMSAR play in biodiversity and forest conservation. (5 Marks)
38. NTFPs provide economic and social sustainability for different ethnic groups in India. (5 Marks)

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