

ESSAY QUESTIONS.

Gymnosperms

1. Describe the internal structure of primary and secondary wood of Pinus with neat and labelled diagrams.
2. Compare the ovules of Cycas, Pinus and Gnetum.
3. Describe the structure of ovule of Cycas with a neat and labelled diagram. Also describe the mechanism of pollination in Cycas.
4. With suitable diagrams explain the life cycle of Pinus.
5. Describe the development of female gametophyte of Gnetum. Give a brief account on its post fertilization changes.
6. Describe why Gymnosperms occupy a position in between Pteridophytes and Angiosperms.?
7. Describe the life cycle of Gnetum.

Pteridophytes

8. Explain how Pteridophytes are related to Gymnosperms and Bryophytes
9. Compare anatomically the stem of Psilotum and Selaginella with that of the rhizome of Marsilea giving emphasis to the types of steles seen in them.
10. Describe the life cycle of Selaginella and compare it with that of Psilotum
11. With neat and labelled diagrams explain the structure of sporocarp of Marsilea. Describe its dehiscence mechanism.
12. Describe the stelar evolution in Pteridophytes.
13. Explain the life cycle of Psilotum

Bryophytes

14. Describe the life cycle of Funaria
15. Compare the sporophytes of Bryophytes you have studied.

16. Describe economic importance of bryophytes.
17. Describe the structure of sporophyte of Funaria. Add a note on the mechanism of its dehiscence.
18. Explain the life cycle of Marchantia.
19. Describe the classification of bryophytes. Give the important features of the major Classes.
20. Describe the life cycle of Anthoceros.

Palaeobotany

21. Write an account on geological time scale and describe the major plant groups evolved during different periods in geological time.
22. Describe the various processes of plant fossil formation. What are the techniques Employed to study fossils.

Short essay type questions -- Gymnosperms

1. Describe the morphological features of Gnetum.
2. Write any four distinguishing features of Cycas.
3. Describe the economic importance of gymnosperms.
4. What are the similarities of Gnetum to angiosperms.?
5. Describe the embryo development seen in Pinus
6. Describe the anatomy of coralloid root of cycas with a labelled diagram.
7. Describe the development of embryo in Gnetum.
8. Describe the anatomy of rachis of cycas with a labelled diagram
9. Explain the anatomy of leaflet of cycas
10. Explain the anatomy of Pinus needle with a labelled diagram
11. Describe the structure of microsporophyll of Cycas.
12. Describe the male cone of Pinus.

Pteridophytes

13. Describe the morphology of Psilotum.
14. Compare the steles of Selaginella stem and Pteris rhizome.
15. Describe the structure of Pteris prothallus.
16. Explain the structure of Psilotum synangium with suitable diagram.
17. Discuss the spore dispersal mechanism in Pteris.
18. Write an account on heterospory with reference to the types studied.
19. Differentiate solenostele with dictyostele.
20. Explain the salient features of Pteris sporophyll.
21. Explain the structure of gametophyte of Psilotum with a neat diagram.
22. Selaginella is special among pteridophytes. Substantiate.
23. Describe the alternation of generation in Pteridophytes.
24. What is rhizophore? Explain its morphology.
25. Explain the anatomy of Marsilea petiole with a diagram.
26. Describe the cone structure in Selaginella.

Bryophytes

27. Explain the anatomy of Marchantia thallus.
28. Describe the sporophyte of Marchantia with a labelled diagram.
29. Enumerate dissimilarities of bryophytes with Pteridophytes.
30. Name and discuss the erect umbrella shaped structure where female sex organs are located in Marchantia.
31. Describe the spore dehiscence mechanism seen in Marchantia sporophyte.
32. Describe the alternation of generation noticed in Marchantia.
33. Describe the anatomy of Riccia thallus with suitable diagrams.
34. Describe the gametophytes of Marchantia.
35. Describe the features of Riccia sporophyte.
36. Draw the structure of Funaria capsule showing all the important features.

37. Describe the economic importance of Bryophytes.
38. Describe the structure of Riccia thallus.
39. Describe the anatomy of the thallus of Anthoceros with a labelled diagram
40. Explain the sexual reproduction seen in Anthoceros.
41. Describe the structure of antheridium of Funaria.
42. Draw a neat and labelled diagram of archegonia of Funaria and describe its features

Palaeo botany

43. Describe the leaf scars of Lepidodendron
44. What are the common methods employed to study fossils.?
45. Explain different types of fossils.
46. Describe the division periods in geological time scale.
47. Describe the stem anatomy of Rhynia.
48. Describe the morphological features of Rhynia.
49. Write a short note on Lepidocarpon.
50. short note on ornamental pteridophytes.

2 marks questions—Gymnosperms

1. Coralloid roots
2. Circinate vernation
3. Xerophytic characters of Cycas leaf
4. Branching pattern of stem of Pinus.
5. Describe the unique features in the morphology of Gnetum leaf.
6. Differentiate eusporangiate and leptosporangiate development.
7. Female cone of Cycas
8. Structure of ovule of Gnetum.
9. Organization of dwarf shoot of Pinus.
10. Differentiate manoxylic and pycno xylic wood.
11. Structure of microspore of Pinus

12. Source of turpentine
13. Name two species of Gnetum.
14. Leaf dimorphism in Pinus.
15. Difference between gymnosperms and Pteridophytes.
16. Anatomy of coralloid roots.
17. Stigmarian root system.
18. Structure of Pinus female cone.
19. What is alternation of generation?
20. Enumerate angiospermic characters of Gnetum.
21. Distinguish between the microsporophyll and megasporophyll of Cycas.
22. Salient features of coralloid roots.
23. Justify the statement Cycas seed represent three phases of life cycle.
24. Brief description of reproductive structure of Gnetum.
25. Anatomical peculiarities of Cycas leaflet.
26. Explain Shower of sulphur
27. What is Bars of Sanio.?
28. Explain meroblastic cleavage
29. Transfusion tissue
30. What is zoidogamy?

Pteridophytes

31. Arrangement of sporophylls in Selaginella strobilus
32. Anatomy of Marsilea rhizome.
33. Ligule of Selaginella.
34. Explain the evolutionary significance of heterospory.
35. Write a short note on ornamental pteridophytes
36. Hydrophytic characters of Marsilea
37. Structure of synangium of Psilotum

38. What are sori? Differentiate gradate and mixed sori.
39. Anatomy of Selaginella stem.
40. What is rhizophore ?
41. Trabeculae

Bryophytes

42. Explain the structure of sporophyte of Marchantia.
43. Describe the habit of Riccia
44. Describe the thallus anatomy of Riccia
45. Describe the structure of gemmae of Marchantia.
46. What is perichaetium? Mention its functions.
47. What are the important features of thallus morphology of Hepaticopsida?
48. Leptosporangiate ferns
49. Indusium in ferns
50. Antheridial cluster of Funaria
51. Describe the distinguishing features of the thallus morphology in members of Musci.
52. Structure of sporophyte of Riccia
53. What are the differences between a gametophyte and sporophyte of a typical Bryophyte ?
54. What are elaters and its function?
55. Distinguish between rhizoids and scales
56. Function of ligule
57. Apospory
58. Marchantia is dioecious . Explain.
59. Gemma cup
60. Explain homosporous and heterosporous with examples.
61. What is alternation of generations?
62. Primitive features of Riccia sporophyte

63. Differentiate perigynium and perichaetium.
64. Describe the vegetative reproduction methods in Riccia.
65. Differences between liverworts and mosses.
66. Similarities of bryophytes and pteridophytes.

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