

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2010 - 11)

SUBJECT CODE: BT/MC/BP24

B.Sc. DEGREE EXAMINATION, APRIL 2011
BRANCH V(A) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
SECOND SEMESTER

COURSE : MAJOR – CORE
PAPER : BRYOPHYTA, PTERIDOPHYTA AND GYMNOSPERMS
TIME : 3 HOURS MAX. MARKS: 100

SECTION –A

ANSWER ALL QUESTIONS:

I Choose the correct answer: (5 MARKS)

1. The gametophyte is dorsiventrally flattened in _____
a. *Porella* b. *Anthoceros* c. *Polytrichum*
2. In the sporophyte of _____ seta is absent
a. *Anthoceros* b. *Porella* c. *Polytrichum*
3. The ovule of _____ is the largest among plants
a. *Cycas* b. *Gnetum* c. *Polytrichum*
4. The leaves are net veined in _____
a. *Porella* b. *Gnetum* c. *Polytrichum*
5. The fossil root is _____
a. *Lepidodentron* b. *Lepidostrobus* c. *Stigmaria*

II Fill in the blanks: (5 MARKS)

6. In *Polytrichum*, the leaves surrounding the antheridia are called as _____.
7. Pseudoelaters are present in _____.
8. Numerous cilia are present in the antherozoids of _____.
9. _____ is the branch of Botany dealing with fossils.
10. The dominant phase in the life cycle of Pteridophyte is _____.

III STATE TRUE OR FALSE (4 x 1 = 4)

11. All the species of *Porella* are dioecious
12. Transfusion tissues are present in the leaves of *Polytrichum*
13. Pteridophytes are reproduced by flowers
14. The Gymnosperms comprise group of plants in which seeds are naked

IV MATCH THE FOLLOWING:**(4 x 1 = 4)**

- | | |
|--------------------|----------------------|
| 15. <i>Nostoc</i> | a. Williamsonia |
| 16. Coralloid root | b. <i>Gnetum</i> |
| 17. Vessels | c. <i>Cycas</i> |
| 18. fossil | d. <i>Anthoceros</i> |

V. Answer any six of the following.**(6 x 3 = 18)****Each answer not to exceed 50 words:**

19. Gemmae
20. Dioecious
21. Rhizome
22. Apospory
23. *Lepidostrobis*
24. Alternation of generation
25. Indusium
26. Heterosporous plant
27. Prothallus

SECTION – B**ANSWER ANY FOUR OF THE FOLLOWING:****(4 x 6 = 24)****Draw diagrams wherever necessary.**

28. Describe the morphology of *Porella*
29. Give a brief account on the sex organs of *Polytrichum*
30. Describe the spore producing structure of *Equisetum*
31. Describe the ovule of *Cycas*
32. With the help of a sketch explain the structure of *Lepidodendron*
33. Write the characteristic features of Gnetopsida

SECTION – C**(2 x 20 = 40)****ANSWER ANY TWO OF THE FOLLOWING:****Draw diagrams wherever necessary.**

34. With the help of a labelled sketch describe the structure of the sporophyte of *Anthoceros*
35. Describe the internal and external structure of the sporocarp of *Marsilea*
36. Give a detail account on the variation in the anatomy (stele) of the stems of *Lycopodium*
37. Give an account of the sexual reproduction of *Cycas*.
