

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2008 -09 & thereafter)

SUBJECT CODE: BT/MC/BP24

B.Sc. DEGREE EXAMINATION, APRIL 2010
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. *Nostoc* colonies are found inside the thallus of
a) *Porella* b) *Anthoceros* c) *Polytrichum* d) *Equisetum*
2. Carinal canal and vallecular canal are present in the stem of
a) *Lycopodium* b) *Marsilea* c) *Equisetum* d) *Gnetum*
3. Transfusion tissues are found in
a) *Cycas* leaflet b) *Cycas* root c) *Cycas* stem d) *Cycas* rachis
4. The stem of *Lycopodium cernuum* shows
a) Actinostele b) Siphonostele c) Plectostele d) Mixed protostele
5. *Marsilea* belongs to the class
a) Lycopsidea b) Sphenopsida c) Filices d) Gnetopsida

II Fill in the blanks: (5 MARKS)

6. The spore on germination gives rise to _____ generation.
7. *Porella* belongs to the class _____.
8. In Bryophytes the _____ perform the function of roots.
9. The young leaves of *Marsilea* show _____ vernation.
10. The ciliated top shaped sperms of _____ are visible to the naked eye.

III MATCH THE FOLLOWING: (4 x 1 = 4)

- | | |
|-------------------------|--------------------------------|
| 11. Amphigastria | Fossil |
| 12. <i>Cycas</i> rachis | Woody climber |
| 13. <i>Gnetum ula</i> | <i>Porella</i> |
| 14. <i>Stigmara</i> | Inverted omega vascular bundle |

IV STATE TRUE OR FALSE**(4 x 1 = 4)**

15. *Anthoceros* is commonly known as hornworts.
16. *Marsilea* is a homosporous fern.
17. *Williamsonia* is a fossil pteridophyte.
18. *Lycopodium phlegmaria* is a pendulous epiphyte.

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

- 19 What are elaters?
- 20 Write notes on bulbils.
- 21 What are tubers?
- 22 Explain the structure of male flowers of *Gnetum*.
- 23 Write short notes on protocorm.
- 24 Briefly describe the structure of mature archegonium of *Porella*.
- 25 Give an account of *Marsilea* sporocarp.
- 26 Write about dimorphic leaves of *Cycas*.
- 27 Mention any three angiospermic characters in *Gnetum*.

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

19. List out the general characteristics of Bryopsida.
20. Describe the structure of *Polytrichum* gametophyte.
21. Explain the internal structure of *Gnetum* leaf.
22. Write notes on *Lepidocarpon*.
23. Give an account of the corolloid root of *Cycas*.
24. Describe the anatomy of *Marsilea* rhizome.

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

25. Give an illustrated account of the internal structure of *Anthoceros* sporophyte.
26. What is alternation of generation? Explain the phenomenon in the life cycle of *Equisetum*.
27. With suitable diagrams explain *Lepidodendron* and *Stigmaria* .
28. Describe the Sexual reproduction of *Cycas*.
