

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2004-05 & thereafter)

SUBJECT CODE: BT/MC/BP24

B.Sc. DEGREE EXAMINATION, APRIL 2008
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: (7 MARKS)

- Naked seeds are seen in
a) *Cycas* b) *Polytrichum* c) *Anthoceros* d) *Marsilea*
- The central sterile strand in the sporophyte of *Anthoceros* is known as
a) Columella b) Involucre c) seta d) Operculum
- Peristome of *Polytrichum* is formed of
a) 32 teeth b) 64 teeth c) 38 teeth d) 62 teeth
- Male flowers of *Gnetum* bears
a) 4 anthers b) 2 anthers c) 3 anthers d) 1 anther
- Corolloid roots of *Cycas* is
a) Geotropic b) Phototropic c) Apogeotropic d) Gravitropic
- Heterospory is exhibited by
a) *Lycopodium* b) *Selaginella* c) *Anthoceros* d) *Moss*
- Nostoc* colonies are seen in the thallus of
a) *Porella* b) *Polytrichum* c) *Anthoceros* d) *Marsilea*

II Fill in the blanks: (5 MARKS)

- The _____ connects foot and the capsule.
- _____ classified bryophytes.
- Porella* belongs to the class _____.
- The xylem in the stem of *cycas* is _____ in nature.
- Cone of _____ is homosporous in nature.

III Say whether True or False: (6 MARKS)

- Scales are seen on the ventral surface of the thallus of *Anthoceros*.
- The sporophyte of *Polytrichum* shows the presence of epiphragm.
- Lycopodium* is also known as ground pine.
- Germination in *Cycas* is hypogean.
- Spicular cells are sclerotic in nature.
- The xylem of *Gnetum* leaf is diploxylic.

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

- 19 Indusium.
- 20 Protostele.
- 21 Microsporophyll.
- 22 Impression.
- 23 Amphigastria.
- 24 Girdle trace.
- 25 Pavement tissue.
- 26 Ramenta.
- 27 Trabaculae.

SECTION – B

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

28. Explain the various vegetative modes of reproduction in Bryophytes.
29. Give the external morphology of the sporophyte of *Marsilea*.
30. Explain the structure of the sex organs of *Polytrichum*.
31. Explain the development of the pollen grain in *Cycas* till spore formation and give its structure.
32. Highlight the classification of Pteridophytes according to Reimier.
33. Explain the structure of *Lepidostrobis* and *Lipodocarpon*.

SECTION – C

(2 x 20 = 40)

ANSWER ANY TWO OF THE FOLLOWING:

Draw diagrams wherever necessary.

34. Give a comparative account of the reproductive units of *Lycopodium* and *Marsilea*.
35. Compare the sporophyte of *Anthoceros* with *Porella*.
36. Give an account of the geologic time scale. Explain any two methods of fossilization.
37. Explain secondary growth in *Gnetum*.
