

# B. Sc. Part-II

## BOTANY

### Paper-III (Pteridophytes, Gymnosperms and Paleobotany)

#### Multiple choice question

1. The seed habit first established in:

- (a) Gymnosperms
- (b) Pteridophytes
- (c) Angiosperms
- (d) None

2. Vascular plants are originated in:

- (a) Silurian period
- (b) Jurassic period
- (c) Cambrian period
- (d) Triassic period

3. Heterospory is seen in:

- (a) *Lycopodium*
- (b) *Selaginella*
- (c) *Pteris*
- (d) *Equisetum*

4. In mature bundle, a lacuna or cavity is formed by disintegration of protoxylem:

- (a) Vallecular canal
- (b) Pith
- (c) Carinal canal
- (d) Central canal

5. Sporocarp is formed in:

- (a) *Adiantum*
- (b) *Marsilea*
- (c) *Polypodium*
- (d) *Equisetum*

6. In plant kingdom largest ovules occur in:

- (a) *Pinus*
- (b) *Cycas*
- (c) *Ephedra*
- (d) *Gnetum*

7. How many years female cones of *Pinus* take to mature.

- (a) Four
- (b) Two
- (c) Three
- (d) Five

8. Species of *Ephedra* which commonly occur in the plains of Rajasthan and Punjab is:

- (a) *Ephedra intermedia*
- (b) *Ephedra major*
- (c) *Ephedra gerardiana*
- (d) *Ephedra foliata*

9. The stele in rhizome of *Rhynia* was:

- (a) Siphonostele
- (b) Solenostele
- (c) Protostele
- (d) Eustele

10. Leaf genus of *Lepidodendron* is:

- (a) *Lepidocarpon*
- (b) *Lepidophyllum*
- (c) *Lepidostrous*
- (d) *Lepidophloios*

11. Ramenta present on:

- (a) Petiole of fern
- (b) Axis of *Rhynia*
- (c) Leaves of *Selaginella*
- (d) Rhizome of *Equisetum*

12. Antherozoids of *Psilotum* is:

- (a) Non flagellate
- (b) Bi flagellate
- (c) Multi flagellate
- (d) None of the above

13. Spike moss is called:

- (a) *Lycopodium*
- (b) *Selaginella*
- (c) *Equisetum*
- (d) None of the above

14. Gymnosperms were evolved in which era:

- (a) Palaeozoic era
- (b) Coenozoic era
- (c) Mesozoic era
- (d) Pre cambrian

15. Dispersal of *Cycas* pollens at:

- (a) 4-celled stage
- (b) 3-celled stage
- (c) 2-celled stage
- (d) 1-celled stage

### Short answer question

1. Write a short note on alternation of generation in Pteridophytes.
2. Describe types of siphonostele.
3. Why does Equisetum has rough surface?
4. What is pycnoxylic wood?
5. What is the seed habit and is found in which plant?
6. Differentiate between heterospory and homosporous.
7. What are Bars of sanio in *Pinus*?
8. What is petrification?
9. Differentiate between normal and coralloid roots of *Cycas*.
10. Write a short note on medicinal significance of gymnosperm.

### Long answer question

1. Explain in detail the internal anatomy of Rhizome and Shoot of *Psilotum*.
2. Describe in detail the male and female gametophyte development in *Marsilea*.
3. Explain structure and development of male gametophyte in *Cycas*.
4. Write a short note on fertilization and embryogeny in *Ephedra*.
5. What is fossilization and describes its various types.