

M. Sc. (Final) Examination, 2001

BOTANY

Third Paper

(Pteridology, Gymnosperms and Palaeobotany)

Time—Three Hours
Maximum Marks— 100

Attempt **FIVE** questions in all,
Selecting at least **TWO** questions from each section.
All questions carry equal marks.

SECTION A

1. Give a detailed account of the general characters and classification of Sphenopsida. Discuss its affinities. **5+10+5=20**
2. With the help of suitable diagrams, compare and contrast the following:
 - (a) Psilotum and Tmesipteris
 - (b) Gametophytes of Selaginella and Isoetes. **10+10=20**

OR

Write detailed notes on:

- (a) Baragwanthia.
 - (b) Lepidodendron
 - (c) Asteroxylon. **6+7+7=20**
3. Trace the Evolutionary sequence in the Stejar system in ferns. Supplement your answer with suitable examples. **20**

OR

Write illustrated notes on

- (a) Affinities of Psilotales
 - (b) Heterospory in Selaginella
 - (c) Primofilices. **6+7+7=20**
4. Write an illustrated account of Fern Cytology and identify the evolutionary trends. **20**

OR

Write notes on the following:

- (a) Soral Evolution
 - (b) Sporocarp of Marsilea
 - (c) Gametophyte of Botrychium. **6+8+6=20**
5. Write a detailed account of Schizaea. Discuss its relationships with Marsileales. **13+7=20**

SECTION B

6. What are 'seed ferns'? With the help of suitable diagrams, differentiate between Heterangium and Lyginopteris. Enumerate features of evolutionary significance in Lyginopteris.. **4+12+4=20**
7. How do Cycadeoids differ from Cycads? Discuss in detail. Why have cycadeoids been considered as probable ancestors to angiosperms? **14+6=20**

OR

Write notes on the following:

- (a) Caytoniales
- (b) Pentoxylales. **10+10=20**
8. Write illustrated notes on the following:
- (a) Platyspermic seeds
- (b) Phylogenetic relationships of Cycadales
- (c) Welwitschia. **6+7+7=20**
9. Differentiate between the following:
- (a) Monoxylic and Pycnoxylic wood
- (b) Baiera and Ginkgoites
- (c) Ephedra and Gnetum. **6+7+7=20**

OR.

Write a detailed account of distribution of Gymnosperms in India. **20**

10. With the help of suitable examples discuss the evolutionary trends in Gymnosperms. **20**

OR

Discuss the current concepts in the classification of Gymnosperms **20**