

Third Semester M. Sc. (Part - II) (CBCS)
Examination

BOTANY

Paper - IX

(Biology and Diversity of Pteridophytes and
Gymnosperms)

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

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- Note :** (1) All questions are compulsory and carry equal marks.
(2) Illustrate your answer with suitable example and diagrams.

1. Define heterospory and give brief illustration of heterospory and seed habit.

OR

Explain geological time scale in detail. 16

2. Write on :

- (a) General characters of Psilotales. 5
(b) Sporocarp of Azolla. 5
(c) Morphology of adult sporophyll of Isoetes. 6

OR

- (d) Anatomy of **Selaginella** stem. 5
- (e) General characters of filicales. 5
- (f) Evolutionary trends in Pteridophytes. 6

3. Discuss :

- (g) Economic importance of Gymnosperms. 5
- (h) Pollen grains germination. 5
- (i) Sir Birbal Sahni's contribution. 6

OR

- (j) Distribution of Gymnosperms in India. 5
- (k) Classification given by D. D. Pant. 5
- (l) Female gametophyte in Gymnosperms. 6

4. Write in detail on Pentoxylales and discuss how it stands as a unique group.

OR

What are Bennettitales ? Write in detail on reproductive organs and its affinities and origin.

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5. Write on :

- (m) Coniferous leaves. 5
- (n) Male flower of **Taxus**. 5
- (o) Anatomy of **Welwitschia** leaf. 6

OR

- (p) Morphological features of Ginkgoales. 5
- (q) Male cone in **Gnetum**. 5
- (r) General characters of Podocarpaceae. 6

