A–1206

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MSCBOT-503

M.Sc. Botany (MSCBOT)

Pteridophytes, Gymnosperms and Palaeobotany

Examination February, 2026

Time : 2:00 Hrs. Max. Marks : 70

Note* :–** This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

Section–A

Long Answer Type Questions (2×19=38)

***Note* :–** Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. Compare and contrast the life-cycles of Selaginella, and Equisetum.
2. Discuss the evolutionary tendencies in Gymnosperms, focusing on reproductive structures, vascular adaptations and reduction of gametophyte.
3. Explain different types of fossils, fossil preservation processes, and their significance in interpreting the history of land vegetation.
4. Compare reproductive structures and features of Ephedrales, and Gnetales.
5. Explain the geological time scale and correlate the major plant groups (Pteridophytes, Gymnosperms, Angiosperms) with geological periods and climatic events.

Section–B

Short Answer Type Questions (4×8=32)

***Note* :–** Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Give a comparative account of Rhynia and Psilotum.
2. Distinguish between : Protostele, Siphonostele and Dictyostele.

3. Explain the economic importance of gymnosperms with reference to wood, resin, and pharmaceuticals.

4. Discuss the evolutionary significance of Sphenophyllum and why is it considered a connecting link between Psilopsida and Lycopsida.

5. Explain the method of serial sectioning or cuticle analysis used in fossil study.

6. Explain heterospory in Selaginella and Isoetes. Why is heterospory considered a precursor to seed habit.

7. Describe the process of sori evolution in pteridophytes.

8. Discuss the salient features and reproductive structures of Pentoxylales. Why is this order considered of great phylogenetic interest ?

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