

**Botany (P.G.)**

**[CBCS]**

**M.Sc. First Semester End Examination-2023**

**(Regular & Supplementary Paper)**

**PAPER- 104**

**[Pteridophytes & Gymnosperms]**

**Full Marks: 40**

**Time: 02 Hrs**

*The figures in the right-hand margin indicate marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**Unit-1**

**Full Marks 20**

**[Pteridophytes]**

**Group A**

- 1. Answer any four questions of the following: 1x4= 4**
- Mention two climber species of ferns.
  - Differentiate between gradate and mixed sori.
  - What is meant by incipient heterospory?
  - What are Eusporangiate and Leptosporangiate ferns?
  - What is centrarch protostele? Where is it found?
  - What is sporocarp? Where does it occur?

**Group B**

- 2. Answer any two questions of the following: 2x4= 8**
- Discuss briefly about the aspospory in pteridophytes. Mention its Significance. 3+1

(2)

- b. Characterize Zosterophyllopsida. Write down the difference between Rhyniopsid and Zosterophyllopsida.
- c. Write a short note on the endangered pteridophytes and their conservation status. 4
- d. Describe shortly the economic importance of pteridophytes with special reference to food, medicine and bio fertilizers. 4

**Group C**

- 3. Answer any one question of the following: 1x8=8
  - a. Characterize Lycophyta with examples. Mention the evolutionary significance of the group. Mention few xerophytic and hydrophytic features of ferns. 4+2+2
  - b. Who discovered the group progymnosperms? Mention the basis of this discovery. Write a note on the genus Archacopteris. 1+2+5

**Unit - 2**

**Full Marks 20**

**[Gymnosperms]**

**Group A**

- 1. Answer any four questions of the following: 1x4= 4
  - a. Name a gymnosperm that has winged seed for wind dispersal.
  - b. Name one halophytic gymnosperm.
  - c. Why is the endosperm of gymnosperm haploid and not triploid?
  - d. Who discover Pentoxylon and where was it discover?
  - e. Why is Taxus bacatta medicinally so important?
  - f. What is amber?

(3)

**Group B**

- 2. Answer any two questions of the following: 2x4= 8
  - a. What are the main groups of gymnosperms? Give examples.
  - b. Write a short note on Caytoniales.
  - c. Write down the characteristics features of Coniferals.
  - d. Discuss male and female reproductive structures of Glossopteris.

**Group C**

- 3. Answer any one question of the following: 1x8=8
  - a. What are seed ferns? Why are seed ferns considered to be intermediate between ptendophytes and gymnosperms? Give explanation with examples. 2+6
  - b. Differentiate between Gnetum, Welwitschia, and Ephedra based on external morphology. Discuss the phylogenetic position of Gnetophyta based on molecular taxonomy. 4+4

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