

Total number of printed pages -4

63 (FY)SEM-2/MAJ2/BOTMAJ1024

2025

**BOTANY**

(MAJOR)

Paper : BOTMAJ1024

*(Archegoniate)*

Full Marks : 50

Pass Marks : 20

Time : Two hours

***The figures in the margin indicate full marks for the questions.***

1. Answer the following questions : 1×5=5

(a) Antherozoids of *Riccia* are

(i) Long, curved and multiflagellate

(ii) Small and non-flagellate

(iii) Small, curved and biflagellate

(iv) Rod-shaped and biflagellate

(b) Which of the following pteridophytes is called resurrection plant ?

- (i) *Equisetum*
- (ii) *Selaginella*
- (iii) *Lycopodium*
- (iv) *Psilotum*

(c) Largest ovule of plant kingdom belongs to

- (i) *Cycas*
- (ii) *Pinus*
- (iii) *Gnetum*
- (iv) *Pteris*

(d) Protonema is a stage in the life cycle of

- (i) *Marchantia*
- (ii) *Pinus*
- (iii) *Funaria*
- (iv) *Anthoceros*

(e) In which type of stele, the vascular tissue is arranged in a continuous, hollow cylinder surrounding a central pith

- (i) *Protostele*
- (ii) *Dictyostele*
- (iii) *Solenostele*
- (iv) *Siphonostele*

2. Answer the following questions: (**any five**)  
2×5=10

- (a) What is alternation of generation? Which is the dominant phase in the life cycle of bryophytes?
- (b) Differentiate between apogamy and apospory.
- (c) What is prothallus?
- (d) What are eusporangiate and leptosporangiate ferns?
- (e) Mention the xerophytic characters of *Pinus* needle.
- (f) What are Club mosses? Give one example.
- (g) Give any two examples of two extinct early land plants.

3. Answer the following questions: (**any five**)  
5×5=25

- (a) Draw and describe archegoniophore of *Marchantia* species.
- (b) Briefly discuss the function of annulus and stomium in Pteridophytes.
- (c) Describe coralloid root and its significance.
- (d) Why is *Psilotum* considered to be very primitive among pteridophytes? Justify.
- (e) Describe briefly the telome theory regarding the evolution of sporophyte in Pteridophytes.
- (f) Describe the structure of strobilus in *Equisetum* with diagram.
- (g) Write a note on male and female cones of *Gnetum* with illustrative diagram.
- (h) Write a note on evolution of sporophyte in bryophytes.

4. Answer **any one** of the following questions :  
10×1=10

- (a) Give an elaborate account on ecological and economic importance of Gymnosperms. 4+6=10
- (b) Write the systematic position of *Selaginella*. *Selaginella* occupy a very significant position in the evolutionary history of pteridophytes – explain. 2+8=10