

**2 0 1 8**

**BOTANY**

**( Major )**

**Paper : 1.2**

**( Bryophytes and Pteridophytes )**

*Full Marks : 60*

*Time : 3 hours*

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

**1. Choose and write the correct answer :    1×7=7**

**(a) Which one is commonly known as peat  
or bog moss?**

**(i) Riccia**

**(ii) Marchantia**

**(iii) Polytrichum**

**(iv) Sphagnum**

**(b) The thallus of Riccia is**

**(i) filamentous**

**(ii) dorsiventral**

**(iii) erect**

**(iv) climber**

- (c) In *Anthoceros*, the sporogenous tissue is derived from
- (i) endothecium tissue
  - (ii) gametophytic tissue
  - (iii) amphithecium tissue
  - (iv) None of the above
- (d) A bryophyte differs from pteridophyte in
- (i) archegonia
  - (ii) lack of vascular tissue
  - (iii) flagellated antherozoids
  - (iv) independent gametophytes
- (e) Protocorm is found in
- (i) *Lycopodium*
  - (ii) *Selaginella*
  - (iii) *Equisetum*
  - (iv) *Marsilea*
- (f) The earth's first forests were formed of plants belonging to
- (i) Psilopsida
  - (ii) Lycopsida
  - (iii) Sphenopsida
  - (iv) Pteropsida

- (g) Stele in *Selaginella* stem is
- (i) protostele
  - (ii) siphonostele
  - (iii) solenostele
  - (iv) dictyostele

2. Distinguish between the following : 2×4=8

- (a) Amphithecium and Endothecium
- (b) Pseudopodium and Vaginula
- (c) Homosporus and Heterosporus
- (d) Strobilus and Sporocarps

3. Answer any *three* of the following : 5×3=15

- (a) Describe the thallus structure of *Riccia* and *Marchantia*.
- (b) Distinguish between *Urostachya* and *Rhopalostachya*.
- (c) Briefly describe the external structure of mature gametophore of *Sphagnum*.
- (d) Describe briefly the stelar variation in the stem of *Lycopodium* species.
- (e) Distinguish between the elaters of *Equisetum* and Bryophytes. Mention the function of elaters. 3+2=5

4. Answer the following questions : 10×3=30

- (a) Write an illustrated account of the sporophyte of *Polytrichum* with a neat diagram. 10

Or

Give an account on the affinities of *Anthoceros*.

- (b) Discuss the peculiarities found in the external features of *Selaginella*. Give a brief account of the morphological nature of rhizophore in *Selaginella*. 5+5=10

Or

Justify the statement, "*Psilotum* is a living fossil". 10

- (c) Define eusporangiate and leptosporangiate development of sporangia in pteridophytes. Describe with neat sketches the stages in the development of sporangium in *Adiantum*. 5+5=10

Or

Define parthenogenesis. Discuss in detail the phenomenon of apogamy in pteridophytes. 2+8=10

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