

2018

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 : $2 \times 4 = 8$

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

3. Answer any *three* of the following : $5 \times 3 = 15$

- (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 : $10 \times 3 = 30$

- (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
