

2014

BOTANY

(Major)

Paper : 1.2

(Bryophytes and Pteridophytes)

Full Marks : 60

Time : 2½ hours

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

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

(a) Tuberculate rhizoids are present in which of the following genera?

(i) *Riccia*

(ii) *Marchantia*

(iii) *Anthoceros*

(iv) *Sphagnum*

- (b) 'Turf Moss' is a common name of
- (i) *Anthoceros*
 - (ii) *Sphagnum*
 - (iii) *Polytrichum*
 - (iv) *Marchantia*
- (c) The protecting layer arching the capsule of *Polytrichum* is
- (i) peristome
 - (ii) columella
 - (iii) calyptra
 - (iv) apophysis
- (d) Which of the following characters indicate xerophytic nature of *equisetum*?
- (i) Adventitious roots
 - (ii) Subterranean rhizome
 - (iii) Sunken stomata on stem
 - (iv) Root hairs
- (e) Spore-bearing organs of *Psilotum* is known as
- (i) synangium
 - (ii) strobilus
 - (iii) sporocarp
 - (iv) sorus

- (f) Indusium is present in spore-producing organ of
- (i) horsetail
 - (ii) maiden hair fern
 - (iii) both horsetail and maiden hair fern
 - (iv) None of the above
- (g) Presence of peltate sporangiophores are characteristic features of
- (i) Psilopsida
 - (ii) Lycopsida
 - (iii) Sphenopsida
 - (iv) Pteropsida
2. Distinguish between the following : $2 \times 4 = 8$
- (a) Acrogynae and Anacrogynae
Jungermanniales
 - (b) Eusporangiate and Leptosporangiate
sporangia
 - (c) Protostele and Siphonostele
 - (d) Amphethecium and Endothecium
3. Write notes on any *three* of the following : $5 \times 3 = 15$
- (a) Internal structure of rhizome in moss
 - (b) Economic importance of bryophytes
 - (c) Appendages of gametophytes of
hepaticopsida

- (d) Morphology of rhizophore in *Selaginella*
- (e) Morphology of spore-bearing organs in *Marsilea*
- (f) Morphology of protocorm in *Lycopodium*

4. Answer the following questions :

- (a) Give an account on the structure of mature sporophyte of *Sphagnum*. Describe its spore dispersal mechanism. 10

Or

Illustrate the theory of 'progressive sterilization of potentially sporogenous tissues' to explain line of evolution of sporophytes among bryophytes.

- (b) Write an account on heterospory and seed habit in pteridophytes. 10

Or

Give a comparative account on stelar organization of *Equisetum* and *Marsilea* stem.

- (c) Describe the structure of sex organs of *Marchantia*. Draw the pattern of life cycle. 10

Or

Describe with diagram the sporophytic generation of *Adiantum*.

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