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) Adventious 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 : 2×4=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 : 5×3=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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