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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) Pseudoelaters without thickening bands occur in

(i) *Riccia*

(ii) *Marchantia*

(iii) *Anthoceros*

(iv) None of the above

(b) Retort cells are found in

(i) *Polytrichum*

(ii) *Sphagnum*

(iii) *Funaria*

(iv) *Pogonatum*

- (c) How many pyramidal teeth are present in the peristome in *Polytrichum*?
- (i) 18
 - (ii) 32 or 64
 - (iii) 42
 - (iv) 54
- (d) The spore producing organs in *Psilotum* are called
- (i) Sporophyll
 - (ii) Indusium
 - (iii) Cone
 - (iv) Synangium
- (e) In which of the following plants spores germinate within the sporangium?
- (i) *Lycopodium*
 - (ii) *Equisetum*
 - (iii) *Selaginella*
 - (iv) *Adiantum*
- (f) Which of the pteridophytes is also known as 'ground pine'?
- (i) *Marsilea*
 - (ii) *Selaginella*
 - (iii) *Lycopodium*
 - (iv) *Pteris*

(g) The fern in which the entire sporangium develops from a single superficial cell of the sporophyll is known as

- (i) Unisporangiate
- (ii) Mesosporangiate
- (iii) Eusporangiate
- (iv) Leptosporangiate

2. Distinguish between the following : $2 \times 4 = 8$

- (a) Antheridiophore and Archegoniophore
- (b) Gemma cups and Tubers
- (c) Rhizophores and Roots
- (d) Indusium of *Adiantum* and *Marsilea*

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

- (a) The structure of mature sporophyte of *Anthoceros*
- (b) The morphological structure of mature gametophore of *Sphagnum*
- (c) Anatomical peculiarities of the rhizome of *Polytrichum*
- (d) Diversity of *Lycopodium prothallus*
- (e) Alternation of generations in reference to the pteridophytes

(4)

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

(a) Describe with neat diagram that bryophytes are the simplest and most primitive land plants.

Or

Describe the evolution of sporophyte by progressive sterilization of potential sporogenous tissue in bryophytes.

(b) What is heterospory? Describe heterospory and seed habit in pteridophytes with special reference to *Selaginella*.

Or

Describe the morphology and anatomy of aerial stem of *Equisetum* with neat and labelled diagram.

(c) What is stele? Describe the various stelar systems found in pteridophytes with suitable diagram.

Or

What are apospory and apogamy? Describe apospory and its factors that influence this phenomenon in pteridophytes.
