

## BOTANY Paper-A

(Plant Diversity-II)

Time : 3 Hours

Max. Marks : 36

- Note :** (i) Attempt *five* questions in all.  
(ii) Question No. 1 is compulsory.  
(iii) Attempt *four* more questions selecting *one* from each Unit (Unit I, II, III, IV).  
(iv) Draw well labelled diagrams wherever necessary.

1. Compulsory :

(A) Choose the correct option.

(i) Pyrenoids are found associated with chloroplasts of :

- |                       |                    |
|-----------------------|--------------------|
| (a) <i>Anthoceros</i> | (b) <i>Funaria</i> |
| (c) <i>Marchantia</i> | (d) <i>Riccia</i>  |

(ii) "Scouring rushes" is the common name of :

- |                        |                      |
|------------------------|----------------------|
| (a) <i>Selaginella</i> | (b) <i>Equisetum</i> |
| (c) <i>Anthoceros</i>  | (d) <i>Funaria</i>   |

- (iii) In which of the following plants independent sporophyte and gametophyte is present?  
 (a) Algae (b) Fungi  
 (c) Bryophytes (d) Pteridophytes
- (iv) In the life cycle of a moss which of the generation is dominant?  
 (a) Haploid gametophytes  
 (b) Diploid gametophyte  
 (c) Haploid sporophyte  
 (d) Diploid sporophyte
- (v) In *Funaria*, that reduction division takes place in the :  
 (a) antheridium (b) archegonium  
 (c) capsule (d) zygote
- (vi) Peltate disc is characteristic feature of strobilus of which pteridophyte?  
 (a) *Equisetum* (b) *Selaginella*  
 (c) *Psilotum* (d) *Rhynia*  $6 \times 1 = 6$

(B) Fill in the blanks :

- (i) Dehiscence of moss capsule takes place by the ..... movements of peristome teeth.
- (ii) Antherozoids of *Marchantia* are .....
- (iii) When two kinds of sex organs are borne on separate branches of the same plant, such are called ..... mosses.
- (iv) Heterospory is considered to be a pre-requisite for .....
- (v) Aerial branches of *Rhynia* bear .....
- (vi) *Anthoceros* shows ..... colonies in the thallus .....  $6 \times 1 = 6$

#### Unit - I

2. (a) Describe the life history of *Marchantia* with the help of series of diagrams only (No description asked) .....
- (b) Explain mechanism of spore dispersal in the capsule of *Riccia*. 4,2
3. Write notes on any two of the following :  
 (a) Gemma cup and gemmae of *Marchantia*  
 (b) Archegoniophore of *Marchantia*  
 (c) Alternation of generation ..... 3,3

#### Unit - II

4. (a) Describe sex organs of *Funaria* ..... 4  
 (b) Draw V.S. Thallus of *Anthoceros* showing antheridia ..... 2
5. Write notes on any two the following :  
 (a) Justify the statement "*Anthoceros* is a synthetic genus."  
 (b) Vegetative reproduction in *Funaria*.  
 (c) Draw V. S. of *Anthoceros* thallus and write the significance of mucilage cavities ..... 3,3

### Unit-III

6. (a) Describe the internal structure of *Rhynia* (= *Aglaophyton*) stem and sporangium.  
(b) Draw well labelled diagrams of mature megagametophyte in *Selaginella*. 3,3
7. Write note on any *two* of the following :  
(a) Morphological nature of rhizophore of *Selaginella*  
(b) Seed habit in *Selaginella*  
(c) T. S. root of *Selaginella* 3,3

### Unit-IV

8. Write notes on any *two* of the following :  
(a) Dehiscence of sporangium in *Pteris*  
(b) Structure of antherozoid in *Equisetum*  
(c) Strobilus of *Equisetum* 3,3
9. Draw well labelled diagrams of any *two* of the following :  
(a) T.S. aerial stem (internode) of *Equisetum*  
(b) T.S. sporophyll of *Pteris*  
(c) V. S. prothallus of *Pteris* 3,3