

(i) Printed Pages : 4 Roll No. ....

(ii) Questions : 9 Sub. Code : 

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Exam. Code : 

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B.A./B.Sc. (General) 2<sup>nd</sup> Semester  
(2054)

BOTANY

Paper : A (Plant Diversity-II)

Time Allowed : Three Hours]

[Maximum Marks : 36

Note :— Attempt **five** questions in all, Question No. **I** is compulsory and attempt **four** more questions selecting **one** question from each unit. Draw Diagrams wherever necessary.

I. (A) Multiple Choice Questions :

(i) First fossil of *Rhynia* was discovered by :

- (a) D.D. Pant                      (b) Kidston and Lang  
(c) Edwards                      (d) Birbal Sahni

(ii) Which of the following is only aquatic species of *Riccia* ?

- (a) *R. fluitans*                      (b) *R. gangetica*  
(c) *R. discolor*                      (d) *R. himalayensis*

(iii) Mucilage cavities are seen in the thallus of :

- (a) *Funaria*                      (b) *Anthoceros*  
(c) *Riccia*                      (d) *Marchantia*

- (iv) In *Equisetum* stem the vallecular canals are filled with :
- (a) Air (b) Water  
(c) Oil (d) Resin
- (v) Which of the following is regarded as organ sui generis in *Selaginella* by Bower and Goebel ?
- (a) Root (b) Stem  
(c) Rhizophore (d) Leaf
- (vi) In *Pteris* leaves are :
- (a) Macrophyllous (b) Microphyllous  
(c) Scale like (d) Absent  $6 \times 1 = 6$

(B) Fill in the blanks :

- (i) Capsule of *Funaria* is differentiated into three regions :  
- apophysis, theca and \_\_\_\_\_ externally.
- (ii) \_\_\_\_\_ layer of spore forms elaters in *Equisetum*.
- (iii) In *Marchantia* sporogonium \_\_\_\_\_ helps in spore dispersal.
- (iv) In *Riccia* the scales are present on the \_\_\_\_\_ surface of thallus.
- (v) Continuous linear sorus in *Pteris* is known as \_\_\_\_\_.
- (vi) Leaves possess ligules in \_\_\_\_\_ genus.  $6 \times 1 = 6$

## UNIT—I

- II. (a) Describe the structure of mature sporogonium of *Riccia*.  
(b) Give an account of external structure of *Riccia* thallus. 3,3
- III. Describe the external features and internal structure of *Marchantia* thallus. 6

## UNIT—II

- IV. Write short notes on the following :
- (a) Protonema in *Funaria*  
(b) Rhizoids in *Funaria*.  
(c) Peristome teeth in *Funaria*. 2,2,2
- V. Describe the structure of *Anthoceros* sporogonium with the help of suitable diagrams. 6

## UNIT—III

- VI. (a) Give an account of sporangiferous spike in *Selaginella*.  
(b) Define heterospory and also write about its importance. 3,3
- VII. Discuss the external and internal features of *Rhynia* sporophyte. 6

## UNIT—IV

VIII. (a) Draw T.S. of aerial stem (internode) of *Equisetum*.

(b) Give a brief account of *Equisetum* strobilus. 3,3

IX. Draw well labelled diagrams of any **two** of the following :

(a) T.S. of rhizome of *Pteris*.

(b) T.S. of fertile pinna (Sporophyll) of *Pteris*.

(c) T.S. of petiole of *Pteris*. 3,3