

(d) T.S. Stem of *Pinus*

(e) L.S female cone of *Cycas*

4. Write short notes on the following (**any three**)

(3×5=15)

(a) Economic Importance of Gymnosperms

(b) Significance of *Physcomitrella* as a model system

(c) Hydrophytic and Xerophytic characters of *Equisetum*

(d) Heterospory and seed habit

(e) Significance of transfusion tissue

5. (a) Describe the morphology and reproductive structures of *Pinus*. (8)

(b) Ecological and economic importance of *Sphagnum*. (7)

6. (a) With the suitable diagram discuss the stellar evolution in pteridophytes. (8)

(b) With suitable diagrams describe the structure and reproduction in *Funaria*. (7)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5802

K

Unique Paper Code : 2162012302

Name of the Paper : Bryophytes, Pteridophytes
and Gymnosperms

Name of the Course : **B.Sc. (Hons.) Botany**

Semester : III

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question No. 1 is compulsory.
3. Attempt **four** questions in all.
4. Answer all parts of each question together.
5. Draw diagrams wherever required.

5802

2

1. (a) Define the following (**any five**): (1×5=5)

- (i) Gemma cup
- (ii) False inducium
- (iii) Elaters
- (iv) Circinate vernation
- (v) Solenostele
- (vi) Sulphur shower
- (vii) Ramenta

(b) Fill in the blanks (**any five**): (1×5=5)

- (i) _____ called as water conducting cells in bryophytes.
- (ii) A cluster of sporangia on the underside of a fern frond is called a _____.
- (iii) The water conducting tissue in gymnosperms is _____.
- (iv) The sporophyte of *Anthoceros* possesses a sterile central column called the _____.
- (v) The capsule of *Funaria* opens by means of teeth-like structures called _____.
- (vi) The fossil of *Rhynia* was discovered by _____.

5802

3

(c) Match the following : (1×5=5)

- | | |
|---------------------------|-----------------------|
| (i) Winged pollen grains | (a) <i>Cycas</i> |
| (ii) Sago palm | (b) <i>Pinus</i> |
| (iii) Model system | (c) <i>Anthoceros</i> |
| (iv) Horn like sporophyte | (d) <i>Rhynia</i> |
| (v) Fossil pteridophyte | (e) <i>Ephedra</i> |

2. Differentiate between the following (**any three**) (3×5=15)

- (a) Bryophytes and Pteridophytes
- (b) Leptosporangiate and Eusporangiate sporangial development
- (c) Apospory and Apogamy
- (d) Sporophyte of *Anthoceros* and *Marchantia*
- (e) Male and Female strobilus of *Gnetum*

3. Draw well labelled diagrams of the following (**any three**) (3×5=15)

- (a) V.S. *Marchantia* thallus passing through gemma cup
- (b) L.S. strobilus of *Selaginella*
- (c) T.S internode of *Equisetum*

P.T.O.