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**3 (Sem-2/CBCS) BOT HC 2**

**2022**

**BOTANY**

(Honours)

Paper : BOT-HC-2026

**(Archegoniate)**

Full Marks : 60

Time : Three hours

***The figures in the margin indicate  
full marks for the questions.***

1. Answer the following question: ***(any seven)***  
1×7=7
  - (i) Write the name of Indian bryologist who earned international fame and is regarded as 'Father of Indian Bryology'.
  - (ii) Name the tallest living gymnosperm.
  - (iii) The antherozoids of Riccia are —
    - (a) Monoflagellate
    - (b) Biflagellate

Contd.

- (c) Quadriflagellate
  - (d) Multiflagellate
- (Select the correct answer)

(iv) Telome theory was proposed by —

- (a) Eames
- (b) Zimmerman
- (c) Mehra
- (d) Sahni

(Select the correct answer)

(v) The genus Rhynia was discovered by \_\_\_\_\_ for the first time.

(Fill in the blank)

(vi) Write the name of spore bearing bean-shaped structure in the genus Marsilea.

(vii) What is protocorm ?

(viii) What do you understand by 'Bars of Sanio' in Ginkgo ?

(ix) The age of the tree or any branch is determined by \_\_\_\_\_. (Fill in the blank)

(x) What is rhizophore ?

2. Write short answer of the following : **(any four)**  
2×4=8

(i) What are coralloid roots ?

(ii) Name a species where polyembryonic condition is found in Gymnosperms.

(iii) Briefly mention the amphibious nature of bryophytes.

(iv) Write on the structure of leaf in *Sphagnum*.

(v) What are the functions of gemma ?

(vi) Write about the megasporophyll of *Cycas*.

(vii) Write briefly on the fertile leaf of *Pteris*.

(viii) What do you understand by synangium ?

3. Answer the following questions : **(any three)**  
5×3=15

(i) 'Ginkgo is a living fossil.' Justify the statement.

(ii) Write a short note on economic importance of *Pinus*.

(iii) Is the sporophytis of *Riccia* wholly dependent on the gametophyte for nutrition ? Justify your answer.

(iv) Briefly describe the archegoniophore of *Marchantia*.

(v) Describe briefly the range of thallus organisation of Bryophytes.

(vi) Discuss the Angiospermic characters of *Gnetum*.

(vii) Describe briefly the Telome theory regarding the evolution of sporophytes in pteridophytes.

- (viii) With diagram describe the organisation and structure of strobilus of *Equisetum*.
4. Write descriptive answers of the following questions : **(any three)** 10×3=30
- (i) Give a comparative account of the male gametophytes in *Cycas* and *Pinus* with the help of diagrams.
  - (ii) With the help of neat labelled diagrams discuss the development of female gametophyte in *Gnetum*.
  - (iii) With the help of labelled diagrams describe the sporophytes of polytrichum.
  - (iv) Describe the heterospory and seed habit in Pteridophytes.
  - (v) Why is *Psilotum* considered to be very primitive among the Pteridophytes ? Explain.
  - (vi) Give a comparative statement of morphology anatomy and reproduction of early land plants cooksonia and Rhynia.
  - (vii) Write a comparative account of different types of gametophytes met in *Lycopodium*. Which of them are regarded as primitive and why ?
  - (viii) With the help of labelled diagrams compare the structures of sporophytes of *Riccia* and *Marchantia*.