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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)  $2 \times 4 = 8$

(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)  $5 \times 3 = 15$

(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 *Marchentia*.

(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*.