



K24U 0710

Reg. No. :

Name :

IV Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/
Improvement) Examination, April 2024
(2019 to 2022 Admissions)

CORE COURSE IN BOTANY/PLANT SCIENCE

4B04BOT/PLS : Plant Diversity II – Pteridophytes and Gymnosperms

Time : 3 Hours

Max. Marks : 40

Instruction : Draw diagrams wherever specified.

PART – A

Objective type questions. Answer **all**.

(4×1=4)

- Coralloid roots of Cycas contain
 - Mycoplasma zone
 - Bacterial zone
 - Mycorrhiza zone
 - Algal zone
- In Pteridophytes the phenomenon of development of sporophyte directly from gametophyte without formation of sex organs and gametes is known as
 - Heterospory
 - Heterogamy
 - Apospory
 - Apogamy
- In the following plant xylem consists of both tracheids and vessels.
 - Pteris
 - Pinus
 - Gnetum
 - Cycas
- Winged pollen grains are observed in
 - Ephedra
 - Pinus
 - Gnetum
 - Cycas

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PART – B

Short essay questions. Answer **any eight**.

(8×2=16)

- Give a brief account on synangia.
- What is anemophilous pollination? Give example.
- Differentiate coralloid root and normal root.
- What is shower of sulphur? In which plant it is found?
- What is cupule? Comment on its structure.
- What is rhizophore? Where it is found?
- What is ligule? Explain its function.
- Differentiate vallecular and carinal canals.
- What are elators? Mention its function.
- Name any two heterosporous pteridophytes.
- List out any four hydrophytic features in Marsilea.
- What is false inducium? In which plant it is found?

PART – C

Essay questions. Answer **any four**.

(4×3=12)

- Explain the anatomical structure of equisetum stem with diagram.
- Explain the structure of ovule in Cycas. Elicit its primitive features.
- Explain the morphological features of Gnetum plant and comment how much it resembles Angiosperms.
- Describe the anatomy of Selaginella stem. List out its salient features.
- Describe the stelar variation exhibited in various species of Pteris.
- Describe the structure of prothallus and gamete formation in Psilotum.



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PART – D

Long Essay questions. Answer **any one**.

(1×8=8)

- Explain the process of reproduction in Pinus. Draw suitable diagrams.
- Heterospory is an advanced character pre-requisite to seed formation in plants. Justify this citing the life cycle of a plant you have studied.
- Comment on the relationships between Pteridophytes and Gymnosperms by listing out their similarities and dissimilarities. Elicit the evolutionary trends observed in Gymnosperms.