

B.Sc.(CBCS) DEGREE EXAMINATION,
NOVEMBER 2023

Fourth Semester

Botany — Core

PTERIDOPHYTES, GYMNOSPERMS AND
PALEOBOTANY

(For those who joined in July 2020 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answers.

- Vascular cryptogams are
 - Fungi
 - Algae
 - Bryophytes
 - Pteridophytes
- Lycopodium* is commonly known as
 - Club moss
 - Bogg Moss
 - Reindeer moss
 - Irish Moss

- Canada balsam is obtained from
 - Larix*
 - Pinus*
 - Cycas*
 - Abies*
- Which of the following constituents a fossil?
 - A mineralized burrow of extinct organisms
 - An unidentified plant found frozen in a glacier
 - An ant found inside a block of amber, dating back to 110 million year
 - All the above
- Who is the father of paleobotany in India?
 - Birbal sahani
 - Mendel
 - Haberlandt
 - Linnaeus

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

- Write short notes on synangium of *Psilotum*.

Or

 - Enumerate the general characters of Pteridophytes.

- Selaginella* belongs to _____ Class.
 - Ligulopsida*
 - Calamopsida*
 - Euporangiopsida*
 - Lycopodiopsida*
- Formation of Sporophyte from vegetative portion of the prothallus without sexual fusion is called as
 - Apogamy
 - Apomixis
 - Apocarp
 - Apospory
- Phloem of Gymnosperm differs from angiosperm by
 - Having no sieve tube
 - Absence of Scelerenchyma
 - Having parenchyma
 - Having no companion cells
- Winged pollen grains are found in _____.
 - Pinus*
 - Gnetum*
 - Cycas*
 - Zamia*
- Which one of the following is most advanced gymnosperm?
 - Pinus*
 - Gnetum*
 - Cycas*
 - Zamia*

- List out the types of Steles in Pteridophytes.

Or

 - Write about the life history of *Adiantum*.
- Explain the general characteristics of Gymnosperms.

Or

 - Write about the internal anatomy of *Pinus* mature stem.
- Write short notes on internal structure of *Gnetum* Leaf.

Or

 - Discuss the angiospermic features of *Gnetum*.
- Describe the structure of the sporophyte of *Rhynia* major, with suitable sketches.

Or

 - Briefly state the types of fossils.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe the gametophyte of *Psilotum* with suitable diagram.

Or

- (b) Illustrate the life history of *Lycopodium*.

17. (a) What is stele? Explain its evolution in Pteridophytes.

Or

- (b) Illustrate the internal structure of Leaf of *Selaginella*.

18. (a) Write an essay on Gymnosperm classification.

Or

- (b) Describe the life history of *Pinus* with suitable diagrams.

19. (a) State the economic importance of Gymnosperms with suitable examples.

Or

- (b) Give a comparative account of the development of the male and female gametophytes of *Pinus* and *Gnetum*.

20. (a) State the fossil beds of India.

Or

- (b) Describe Geological Time Scale
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