

(3 Hours)

[Total Marks: 100]

- N.B.: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat labelled diagrams wherever necessary.

Q1. Answer any TWO of the following:

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- A) Describe the internal structure of *Marchantia* thallus and add a note on its systematic position
- B) Sketch, label and describe the sporophyte of *Pellia*.
- C) Explain the structure of archegoniophore of *Sphagnum*
- D) Explain the structure of antheridiophore of *Marchantia*.

Q2. Answer any TWO of the following:

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- A) Describe different types of steles seen in different species of *Lycopodium*.
- B) Describe the L.S of strobilus of *Equisetum*.
- C) Give an account of internal structure V.S. of sporocarp of *Marsilea*.
- D) Explain with the help of schematic diagram "alternation of generation in *Adiantum*".

Q3. Answer any TWO of the following:

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- A) Describe the "Retrogressive evolution" theory of gametophytes in Bryophytes.
- B) Explain economic importance of bryophytes giving suitable examples.
- C) With the help of neat labeled diagrams explain different types of sori found in pteridophytes.
- D) Write a note on ecological habitats of bryophytes.

Q4. Answer any TWO of the following:

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- A) Write a detailed account of the ovulate strobilus of Biota (*Thuja*). Add a note on the structure of ovule.
- B) Give the systematic position of *Thuja* and comment on the external morphology of the same.
- C) Describe the internal structure of young stem of *Ephedra*.
- D) Give an account of habit, external features of *Gnetum* and give the systematic position of the same.

Q5. Write Short Notes on: (any FOUR)

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- a) Systematic position of *Sphagnum*
- b) L.S of *Lycopodium* cone
- c) Xerophytic and hydrophytic features in *Equisetum*.
- d) Distribution of pteridophytes
- e) Bryophytes as bioindicators of air pollution.
- f) Megasporangiate strobilus of *Ephedra*