(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: **20**

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: **20**

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: **20**

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: **20**

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)** **20**

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*