

**G-1/158/22**

Roll No. ....

**I Semester Examination, January 2022**

**M.Sc.**

**BOTANY**

**Paper IV**

**(Bryophyta, Pteridophyta and Gymnosperm)**

Time : 3 Hours ]

[ Max. Marks : 80

**Note :** *All questions are compulsory. Question Paper comprises of 3 Sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

**SECTION A**

**1×8=8**

**(Objective Type/Multiple Choice Questions)**

*Choose the correct answer :*

1. A collection of sporangia on a placenta covered with indusium is known as :  
(a) Ramenta                      (b) Sorus  
(c) Sporophyll                  (d) None of these.
2. Leptosporangiate sporangia are seen in :  
(a) Salvinia                      (b) Marsilea  
(c) Pteris                        (d) All of these.

P.T.O.

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3. The development of sporophyte from gametophyte without gamete formation is called :
- (a) Apospory                      (b) Apogamy  
(c) Heterospory                  (d) Parthenogenesis.
4. Which of the following statements is not correct for bryophytes :
- (a) They lack tracheids and vessels  
(b) They are photosynthetic  
(c) Their zygote undergoes meiosis and then produces the sporophyte  
(d) Their spores germinate producing gametophytes.
5. Endosperm of gymnosperms is :
- (a) Haploid                      (b) Diploid  
(c) Triploid                      (d) Tetraploid
6. In which periods gymnosperms were present in the form of dominant vegetation :
- (a) Jurassic and Cretaceous  
(b) Triassic and Jurassic  
(c) Triassic and Cretaceous  
(d) None of the above.

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7. How many cells are present in the male gametophyte of Ephedra at the time of pollination :
- (a) Three                      (b) Four  
(c) Five                      (d) Seven
8. Which is living fossil ?
- (a) Ginkgo                      (b) Gnetum  
(c) Welwetschia                  (d) Pinus

## SECTION B

6×4=24

### (Short Answer Type Questions)

*Note : Answer the following questions in 250 words.  
Draw well labelled diagrams wherever necessary.*

## Unit-I

1. Describe the range of thallus organization in Bryophyta.

*Or*

Describe the structure and development of sporophyte of Pellia.

## Unit-II

2. What is Heterospory ? Describe the role of heterospory in the evolution of seed.

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*Or*

Write a short note on evolution of stele in Pteridophytes.

### Unit-III

3. Write short note on resemblances and differences amongst Gymnosperms and Pteridophyta.

*Or*

Write short note on economic importance of Gymnosperms.

### Unit-IV

4. Write short note on external morphology of Welwitschia.

*Or*

Give an illustrated account of Glossopteris leaf.

### SECTION C

12×4=48

#### (Long Answer Type Questions)

*Note : Answer the following questions in 500 words.  
Draw well labelled diagram wherever necessary.*

### Unit-I

1. Explain the sterilization of sporogenous tissues in bryophytes.

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*Or*

Describe the structure and development of sex organs in Anthoceros.

### Unit-II

2. What are vascular cryptogames ? Write the characteristic features of Pteridophytes.

*Or*

Give an illustrated account of the sporophyte of Horneophyton.

### Unit-III

3. Describe the distinguishing feature of Gymnosperms and comment briefly their affinities.

*Or*

Describe the structure and theories regarding origin of Paleozoic ovule.

### Unit-IV

4. Write the general account of Caytoniales.

*Or*

Describe the post fertilization development in the life-cycle of Pinus.

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