

**2 0 1 8**

( 6th Semester )

**BOTANY**

NINTH PAPER

**( Pteridophyta, Gymnosperm, Paleobotany and Palynology )**

*Full Marks : 55*

*Time : 2½ Hours*

**( PART : A—OBJECTIVE )**

( *Marks : 20* )

*The figures in the margin indicate full marks for the questions*

SECTION—A

( *Marks : 5* )

Tick (✓) the correct answer in the brackets provided :

1×5=5

**1.** Which of the following is most primitive division?

(a) Lycopside ( )

(b) Psilopsida ( )

(c) Pteropsida ( )

(d) Sphenopsida ( )

2. Sporocarp is formed in

- (a) *Adiantum* ( )
- (b) *Ophioglossum* ( )
- (c) *Lepidodendron* ( )
- (d) *Marselia* ( )

3. The archegonial neck of \_\_\_\_\_ is the longest among the gymnosperms.

- (a) *Ginkgo* ( )
- (b) *Taxus* ( )
- (c) *Ephedra* ( )
- (d) *Gnetum* ( )

4. Megasporangium is a/an

- (a) pollen sac ( )
- (b) ovule ( )
- (c) seed ( )
- (d) venter ( )

5. Cordaites belongs to the class

- (a) Coniferopsida ( )
- (b) Gnetopsida ( )
- (c) Cycadopsida ( )
- (d) Ginkgopsida ( )

SECTION—B

( Marks : 15 )

Write notes on the following :

3×5=15

1. Heterospory
2. Fertile spike of *Ophioglossum*
3. Morphology of *Ephedra*
4. Economic importance of gymnosperm
5. Pollen production

( PART : B—DESCRIPTIVE )

( Marks : 35 )

*The figures in the margin indicate full marks for the questions*

1. Define stele. Describe the various types of stele. 1+6=7

**OR**

Answer any *two* in brief :

$3\frac{1}{2} \times 2 = 7$

- (a) Differentiate between Eusporangiate and Leptosporangiate sporangia.
- (b) Write on the concept of the Telome theory by Zimmerman.
- (c) Describe the different types of sorus.

2. Describe the life history of *Adiantum*. 7

**OR**

Write the characteristics and distribution of *Rhynia*.

7

3. Describe the structure of male and female strobili of *Ginkgo*. 7

**OR**

Explain the male and female gametophyte of *Taxus*. 7

4. Give an account on the distribution of gymnosperm in India. 7

**OR**

Describe the structure and evolution of ovule in gymnosperms. 7

5. What is fossil? Describe the various types of fossil. 7

**OR**

Write notes on any *two* of the following :  $3\frac{1}{2} \times 2 = 7$

(a) Main Characters of Pteridospermales

(b) Features of Lyginopteris

(c) Pollen Morphology

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