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( CBCS )

( 6th Semester )

**BOTANY**

NINTH PAPER

**( Pteridophytes, Gymnosperms, Palaeobotany and Palynology )**

Full Marks : 75

Time : 3 hours

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

**( SECTION : A—OBJECTIVE )**

( Marks : 10 )

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

1×10=10

1. Which pteridophyte is commonly known as *adder's-tongue fern*?

- (a) *Marsilea* ( )
- (b) *Rhynia* ( )
- (c) *Ophioglossum* ( )
- (d) *Adiantum* ( )

2. The genus *Lepidodendron* flourished during the time

- (a) carboniferous ( )
- (b) devonian ( )
- (c) silurian ( )
- (d) permian ( )

3. The term 'gymnosperm' was first used by

- (a) Aristotle ( )
- (b) Theophrastus ( )
- (c) Robert Hooke ( )
- (d) A. G. Tansley ( )

4. The albuminous cells are found in  
(a) *Cycas* ( )  
(b) *Taxus* ( )  
(c) *Ginkgo* ( )  
(d) *Ephedra* ( )
5. Normally the archegonia have neck of four cells arranged in  
(a) one tier ( )  
(b) two tiers ( )  
(c) three tiers ( )  
(d) four tiers ( )
6. The wood used for timber and tapped for turpentine is  
(a) *Gnetum* ( )  
(b) *Ephedra* ( )  
(c) *Ginkgo* ( )  
(d) *Pinus* ( )
7. The name 'Gondwana' was suggested by  
(a) Williams ( )  
(b) Hyde ( )  
(c) Haridasan ( )  
(d) Medicott ( )
8. *Lyginopteris* belongs to  
(a) Coniferopsida ( )  
(b) Cycadopsida ( )  
(c) Gnetopsida ( )  
(d) Psilopsida ( )
9. The first characteristics to be considered when identifying pollen grains is  
(a) intine ( )  
(b) cessation ( )  
(c) aperture ( )  
(d) inaperture ( )
10. The intine or inner layer of a pollen grain is made up of  
(a) cellulose and pectin ( )  
(b) cellulose and lignin ( )  
(c) hemicellulose and pectin ( )  
(d) hemicellulose and lignin ( )

( SECTION : B—SHORT ANSWERS )

( Marks : 15 )

Write short notes on the following :

3×5=15

UNIT—I

1. Morphology of *Adiantum*

**OR**

2. Characteristics of *Rhynia*

UNIT—II

3. Morphology of *Ginkgo*

**OR**

4. Reproduction in *Taxus*

UNIT—III

5. Living gymnosperms in India

**OR**

6. Evolution of ovule

UNIT—IV

7. Main characters of Pteridospermales

**OR**

8. Features of *Lyginopteris*

UNIT—V

9. Pollen production

**OR**

10. Scope of palynology

( SECTION : C—DESCRIPTIVE )

( Marks : 50 )

Answer the following questions :

10×5=50

UNIT—I

1. Give an account on the morphology and reproduction of *Marsilea*.

**OR**

2. Write short notes on the following : 5+5=10  
(a) Characteristics of *Lepidodendron*  
(b) Distribution of *Calamites*

UNIT—II

3. Give an account on morphology and reproduction of *Ephedra*. 10

**OR**

4. Briefly mention the following : 5+5=10  
(a) Classification of gymnosperms  
(b) Morphology of *Taxus*

UNIT—III

5. Describe in detail the economic importance of gymnosperms. 10

**OR**

6. Write brief notes on the following : 5+5=10  
(a) Structure of ovule of gymnosperms  
(b) Phylogenetic trends in gymnosperms

UNIT—IV

7. What is Palaeobotany? Describe the formation and type of fossils. 2+8=10

**OR**

8. Briefly describe the following : 5+5=10  
(a) Geological Time Scale  
(b) Features of *Cordaites*

UNIT—V

9. Give an account of pollen morphology and its role in plant taxonomy. 10

**OR**

10. Write short notes on the following : 5+5=10  
(a) Pollen allergy  
(b) Dispersal of pollen in time and space

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