

**2 0 2 2**

( CBCS )

( 6th Semester )

**BOTANY**

TENTH PAPER

**( Angiosperm Taxonomy, Anatomy and Embryology )**

*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.** Bentham and Hooker broadly classified the plants into two groups

- (a) polypetalae and gamopetalae ( )
- (b) gymnosperm and angiosperm ( )
- (c) cryptogamia and phanerogamia ( )
- (d) dicot and monocot ( )

2. The earliest known fossils of angiosperms are approximately \_\_\_\_\_ years old.

(a) 13000 million ( )

(b) 130000 million ( )

(c) 1.3 million ( )

(d) 130 million ( )

3. According to ICBN rules, in case the specific name is based on the name of a person, the first letter should be

(a) in italic and bold ( )

(b) in small letter ( )

(c) in capital letter ( )

(d) in small letter and separately underlined ( )

4. The standard size of herbarium sheet is

(a) 12.5 inches × 16.5 inches ( )

(b) 11.5 inches × 16.5 inches ( )

(c) 15.5 inches × 24.5 inches ( )

(d) 16.5 inches × 24.5 inches ( )

5. *Parkia speciosa* locally known as 'Zawngtah' belongs to which family?

- (a) Rutaceae ( )
- (b) Euphorbiaceae ( )
- (c) Magnoliaceae ( )
- (d) Fabaceae ( )

6. Which of the following is a fruit-yielding family?

- (a) Fabaceae ( )
- (b) Magnoliaceae ( )
- (c) Rutaceae ( )
- (d) Verbenaceae ( )

7. Intra-stelar growth refers to the activities of vascular cambium

- (a) below epidermis ( )
- (b) below endodermis ( )
- (c) between the vascular bundles ( )
- (d) inside the cortex ( )

**8.** An increase in thickness (girth) without secondary growth is referred to as

- (a) extra-stelar growth ( )
- (b) cortical thickening ( )
- (c) anomalous secondary growth ( )
- (d) abnormal secondary xylem thickening ( )

**9.** \_\_\_\_\_ is capable of sensing environmental signals, and can produce and secrete signal to regulate the growth of the embryo.

- (a) Endosperm ( )
- (b) Endoderm ( )
- (c) Embryo sac ( )
- (d) Pollen tube ( )

**10.** Which one is triploid?

- (a) Megaspore ( )
- (b) Embryo ( )
- (c) Endosperm ( )
- (d) Microspore ( )

( SECTION : B—SHORT NOTE )

( Marks : 15 )

Write short notes on the following :

3×5=15

UNIT—I

1. Merits of Bentham and Hooker's classification

**OR**

2. Chemotaxonomy

UNIT—II

3. Importance of herbarium

**OR**

4. Importance of botanical garden

UNIT—III

5. Economic importance of Zingiberaceae

**OR**

6. Important features of Magnoliaceae

UNIT—IV

7. Cork cambium

**OR**

8. Anatomical features of hydrophytes

UNIT—V

9. Monocot embryo

**OR**

10. Differences between bisporic and tetrasporic types of embryo sac

( SECTION : C—DESCRIPTIVE )

( Marks : 50 )

Answer the following questions :

10×5=50

UNIT—I

1. Give the classification given by Engler and Prantl. Write the merits and demerits of Engler and Prantl's classification. 4+6=10

**OR**

2. Write notes on the following : 5×2=10

- (a) Merits of Hutchinson classification  
(b) Numerical taxonomy

UNIT—II

3. What is IBN? Discuss the rules and recommendations of IBN. 2+8=10

**OR**

4. Write accounts on the following : 5×2=10

- (a) Evolution of angiosperm  
(b) Advantages of botanical garden over herbarium

UNIT—III

5. Write a note on the characteristic features of Liliaceae and their economic importance. 5+5=10

**OR**

6. Write notes on the following : 5×2=10

- (a) Convolvulaceae  
(b) Economic importance of Orchidaceae

UNIT—IV

7. What is root-stem transition? Describe the different types of root-stem transition with suitable diagram. 2+8=10

**OR**

8. Write notes on the following : 5×2=10  
(a) Anatomical features of xerophytes  
(b) Secondary growth

UNIT—V

9. What is pollination? Describe the structure and function of endosperm with suitable diagram. 2+8=10

**OR**

10. Write notes on the following : 5×2=10  
(a) Advantage of cross-pollination  
(b) Polyembryony

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