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(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. Whose classification system is known as natural system of classification?

(a) Engler and Prantl ()

(b) Bentham and Hooker ()

(c) Carolus Linnaeus ()

(d) John Hutchinson ()

2. Numerical taxonomy is otherwise called

(a) cladistics ()

(b) phenetics ()

(c) dendrometrics ()

(d) taximetrics ()

3. The standard size of herbarium sheet is

(a) 43 cm × 29 cm ()

(b) 41 cm × 29 cm ()

(c) 42 cm × 30 cm ()

(d) 40 cm × 27 cm ()

4. Lloyd Botanical Garden is situated in

(a) Dehradun ()

(b) Kolkata ()

(c) Lucknow ()

(d) Darjeeling ()

5. In tetradynamous condition of the flower, stamens are

(a) 2 short and 2 long ()

(b) 4 short and 2 long ()

(c) 4 long and 2 short ()

(d) 2 long and 4 short ()

6. Plants are shrubs or woody trees in

(a) Convolvulaceae ()

(b) Liliaceae ()

(c) Zingiberaceae ()

(d) Magnoliaceae ()

7. Which of the following types of root-stem transition is found in some monocots?

(a) *Lathyrus* type ()

(b) *Fumaria* type ()

(c) *Anemarrhena* type ()

(d) *Cucurbita* type ()

8. Grape-like crystalline masses of calcium carbonate called cystoliths are found in the leaf of

(a) *Cynodon* ()

(b) *Ficus* ()

(c) *Capparis* ()

(d) *Nerium* ()

9. Early development of monocot and dicot embryos is similar up to

(a) dyad stage ()

(b) quadrant stage ()

(c) octant stage ()

(d) globular stage ()

10. The egg apparatus is characterized by a single synergid in which type of embryo sac development?

(a) *Peperomia* type ()

(b) *Penaea* type ()

(c) *Drusa* type ()

(d) *Fritillaria* type ()

(SECTION : B—SHORT ANSWERS)

(Marks : 15)

Write short notes on the following :

3×5=15

UNIT—I

1. Chemotaxonomy

OR

2. Artificial system of plant classification

UNIT—II

3. Importance of herbarium

OR

4. Second line of evolution of angiosperm

UNIT—III

5. Floral characters of Euphorbiaceae

OR

6. Economic importance of Zingiberaceae

UNIT—IV

7. Cork cambium

OR

8. Anatomical feature of xerophytes

UNIT—V

9. Types of embryo

OR

10. Cleavage polyembryony

(SECTION : C—DESCRIPTIVE)

(Marks : 50)

Answer the following :

10×5=50

UNIT—I

1. What do you mean by numerical taxonomy? Describe the different steps involved in the construction of taxonomic groups. 2+8=10

OR

2. Write short notes on the following : 5+5=10
(a) Principles adopted by Hutchinson for classification of flowering plants
(b) Merits and demerits of Bentham and Hooker's classification

UNIT—II

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

OR

4. Write accounts on the following : 5+5=10
(a) Evolution of angiosperm
(b) Advantages of botanical garden over herbarium

UNIT—III

5. Describe the distinguishing features of Orchidaceae. Add a note on their economic importance. 6+4=10

OR

6. Write notes on the following : 5+5=10
(a) Characteristic features of Liliaceae
(b) Economic importance of Polygonaceae

UNIT—IV

7. Differentiate between normal and anomalous secondary growth. With suitable diagram, explain the secondary growth in stem. 2+8=10

OR

8. Briefly describe the following : 5+5=10
(a) *Cucurbita* and *Lathyrus* type of root-stem transition
(b) Difference between cambium and phellogen

UNIT—V

9. What do you mean by megagametogenesis? Elucidate the bisporic and tetrasporic types of embryo sac. 2+8=10

OR

10. Write accounts on the following : 5+5=10
(a) Types and function of endosperm
(b) Agents of cross-pollination
