2023

(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. Based on number, union, length and certain other characters of stamen, Linnaeus divided plants into

(a) 20 classes ( )

(b) 22 classes ( )

(c) 24 classes ( )

(d) 26 classes ( )

2. Bentham and Hooker's classification was published in

(a) *Species Plantarum* ( )

(b) *Genera Plantarum* ( )

(c) *Critica Botanica* ( )

(d) *Fundamenta Botanica* ( )

3. The alternative name of Guttiferae is

(a) Lamiaceae ( )

(b) Fabaceae ( )

(c) Apiaceae ( )

(d) Clusiaceae ( )

4. The biggest herbarium of the world is at

(a) Paris ( )

(b) Kew ( )

(c) New York ( )

(d) Tokyo ( )

5. Which of the following families is characterized by trimerous flowers, superior and trilocular ovary with axile placentation?

(a) Liliaceae ( )

(b) Zingiberaceae ( )

(c) Rutaceae ( )

(d) Euphorbiaceae ( )

6. The type of fruit in Polygonaceae is

(a) cypsela ( )

(b) pair of follicles ( )

(c) pepo ( )

(d) trigonous nutlet ( )

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

(a) *Anemarrhena* type ( )

(b) *Fumaria* type ( )

(c) *Lathyrus* 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. In *Fritillaria* type of embryo sac, the antipodal nuclei are triploid and the polar nucleus is

(a) monoploid ( )

(b) diploid ( )

(c) triploid ( )

(d) tetraploid ( )

10. In which type of embryogeny, the first division of oospore is longitudinal?

(a) Onagrad type ( )

(b) Asterad type ( )

(c) Piperad type ( )

(d) Chenopodiad type ( )

(SECTION : B—SHORT ANSWER)

(*Marks* : 15)

Write short notes on the following : 3×5=15

UNIT—I

1. Chemotaxonomy

OR

2. Demerits of Hutchinson's 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 Fabaceae

UNIT—IV

7. Anomalous secondary growth in dicotyledons

OR

8. Periderm

UNIT—V

9. Structure of endosperm

OR

10. False polyembryony

(SECTION : C—DESCRIPTIVE)

(*Marks* : 50)

Answer the following questions : 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 : 5×2=10

(a) Principles adopted by Hutchinson for the classification of flowering plants

(b) Outline of Bentham and Hooker's classification

UNIT—II

3. Describe the different techniques involved in preparation of herbarium. Add a few notes on their management. 6+4=10

OR

4. Briefly describe the following : 5×2=10

(a) Typification

(b) Importance of botanic garden

UNIT—III

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

OR

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

(a) Characteristic features of Cyperaceae

(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 : 5×2=10

(a) *Cucurbita* and *Lathyrus* types of root-stem transition

(b) Anatomical features of hydrophytes

UNIT—V

9. What do you mean by megagametogenesis? Describe the different types of tetrasporic type of embryo sac. 2+8=10

OR

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

(a) Different types of embryo

(b) Nuclear endosperm

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