2023

(CBCS)

(2nd Semester)

BOTANY

Paper No. : BGE–02/DSC–1

(Plant Anatomy and Embryology)

Full Marks : 75 *Pass Marks* : 40%

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

Answer *any* **five** questions

1. *(a)* Discuss the theories of root apical meristem. 10

Or

(b) Write notes on any *two* of the following : 5×2=10

(i) Parenchyma

(ii) Xylem

(iii) Sclerenchyma

2. *(a)* Describe the internal structure of a monocot root. 10

Or

(b) Write the anatomical difference between Dicot and Monocot stem. 10

3. *(a)* Describe the structure and function of vascular cambium. 10

Or

(b) Define secondary growth. Write a note on the secondary growth in dicot root. 2+8=10

4. *(a)* Write notes on the following : 5×2=10

(i) Epidermis in plants

(ii) Types of stomata

Or

(b) Give an account on the adaptive system in xerophytes. 10

5. *(a)* Explain the structure of a typical anther with well differentiated wall layers. 10

Or

(b) Write on the following : 5×2=10

(i) Anatropous ovule

(ii) Tetrasporic embryo sac

6. *(a)* Define pollination. Write a note on the different types of pollination in plants. 2+8=10

Or

(b) Write on the following : 5×2=10

(i) Double fertilization

(ii) Significance of seed dispersal

7. *(a)* Explain the types of endosperm. 10

Or

(b) Write on the following : 5×2=10

(i) Characters of monocot embryo

(ii) Role of endosperm in embryo development

8. *(a)* What is apomixis? Explain the types of apomixis. 2+8=10

Or

(b) Describe the practical application of apomixis. 10

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BOTANY

Paper No. : BGE–02/DSC–1

(Plant Anatomy and Embryology)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(*Marks* : 15)

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×15=15

1. Xylem is a

(a) complex tissue ( )

(b) simple tissue ( )

(c) Both *(a)* and *(b)* ( )

(d) None of the above ( )

2. Histogen theory was proposed by

(a) Nageli ( )

(b) Schiipp ( )

(c) Peterson ( )

(d) Hanstein ( )

3. Exarch xylem is found in

(a) rachis ( )

(b) root ( )

(c) stem ( )

(d) leaf ( )

4. Water containing cavities in the vascular bundles is a characteristic feature of

(a) dicot root ( )

(b) monocot stem ( )

(c) monocot leaves ( )

(d) dicot stem ( )

5. Heartwood is also known as

(a) duramen ( )

(b) sapwood ( )

(c) non-porous wood ( )

(d) porous wood ( )

6. Growth that increases the girth and thickness of the plant is called

(a) primary growth ( )

(b) secondary growth ( )

(c) tertiary growth ( )

(d) None of the above ( )

7. Stroma surrounded by three cells of which one is distinctly smaller than the other two is called

(a) anisocytic ( )

(b) paracytic ( )

(c) anomocytic ( )

(d) diacytic ( )

8. Plant cuticle is present external to the

(a) epidermis ( )

(b) endodermis ( )

(c) cortex ( )

(d) periderm ( )

9. Cytoplasm of the pollen grains is rich in

(a) starch ( )

(b) proteins ( )

(c) minerals ( )

(d) vitamins ( )

10. The three chalazal cells of an embryo sac are called

(a) synergids ( )

(b) antipodal cells ( )

(c) polar nuclei ( )

(d) chalaza ( )

11. The deposition of pollen on the stigma of another flower of the same plant is known as

(a) homogamy ( )

(b) dichogamy ( )

(c) geitonogamy ( )

(d) xenogamy ( )

12. The seed coat is formed from

(a) integuments ( )

(b) ovary ( )

(c) endosperm ( )

(d) pericarp ( )

13. Which of the following is the main function of endosperm?

(a) Transduction ( )

(b) Protection ( )

(c) Restriction ( )

(d) Nourishment ( )

14. The portion below the epicotyl is

(a) suspensor ( )

(b) cotyledons ( )

(c) hypocotyl ( )

(d) None of the above ( )

15. The term 'Apomixis' was coined by

(a) Ernst ( )

(b) Swingle ( )

(c) Winkler ( )

(d) Navashin ( )

SECTION—II

(*Marks* : 10)

Write on the following in few sentences (any *five*) : 2×5=10

1. Procambium

2. Conjunctive tissue

3. Bulliform cells

4. Xeropytes

5. Tapetum

6. Apomixis

7. Orthotropous ovule

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