

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

(3)

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*) : $2 \times 5 = 10$

1. Procambium

2. Conjunctive tissue

3. Bulliform cells

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4. Xeropytes

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5. Tapetum

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6. Apomixis

7. Orthotropous ovule

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