

**2025/FYUG/ODD/SEM/
BOTDSC-301T/229**

FYUG Odd Semester Exam., 2025

BOTANY

(5th Semester)

Course No. : BOTDSC-301T

(Advanced Morphology and Anatomy)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

UNIT—I

Answer any *two* from the following : $2 \times 2 = 4$

- (a) Write the salient features of seed-bearing plants.
- (b) Write a note on modification of leaves.
- (c) Mention the functions of various floral parts.

(2)

2. Answer any one from the following :

(a) "Flower is a modified shoot." Explain the statement citing examples from nature. Give an account on the underground modification of stem. $7+3=10$

(b) Define inflorescence. Describe various theories regarding origin and evolution of inflorescences. Give an account on special types of inflorescence. $1+6+3=10$

UNIT—II

3. Answer any two from the following :

(a) Write an account on self-incompatibility. $2 \times 2 = 4$

(b) Write a note on the dispersal mechanisms.

(c) Mention contrivances for cross-pollination.

4. Answer any one from the following :

(a) Define endosperm. Write a note on the types and functions of endosperm. Give an account on 'double-fertilization' and 'triple fusion'. Add diagrams. $1+5+4=10$

(3)

(b) Describe the process of tetra-spore embryo-sac development with neat diagrams. Give an account on placentation and its types. Write a short note on Carpel polymorphism. $4+3+3=10$

UNIT—III

Answer any two from the following : $2 \times 2 = 4$

(a) Who proposed Histogen theory? Briefly mention the theory.

(b) Write a note on cytodifferentiation.

(c) Give an account on quiescent centre.

Answer any one from the following : 10

(a) Write the application of plant anatomy in forensic science and pharmacognosy. Write a brief note on organization of shoot-apical meristem. $5+5=10$

(b) Give a brief account on various types of tissue systems found in plants. Write a note on organogenesis and root-stem transition. $5+5=10$

(Turn Over)

(Continue)

(4)

UNIT—IV

7. Answer any two from the following :

2×2=

- (a) Write various elements of phloem.
- (b) Differentiate between softwood and heartwood.
- (c) Define dendrochronology.

8. Answer any one from the following :

1

- (a) What is cambium? Discuss the role of cambium in the development of secondary growth of thickness in plants. Give an account on plasmodesmata with its functions. 2+5+3=10
- (b) What is anomalous secondary growth? Write various reasons for anomalous secondary growth of thickness in plants with special reference to *Amaranthus*. Define tyloses with functions. 2+6+2=10

UNIT—V

9. Answer any two from the following :

2×2=4

- (a) Write the structure and functions of stomata.

(5)

Write a brief note on periderm.
Write a short note on cuticle.

Answer any one from the following :

10

- (a) What do you mean by physical and physiological xerophytic plants? Write various adaptive features found in xerophytic plants. Write a note on vascular tissue system. 2+5+3=10

- (b) Give an account on various types of adaptive features found in hydrophytic plants. Write a note on cyto-differentiation of tracheary elements. 6+4=10

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