

**2023/TDC(CBCS)/ODD/SEM/  
BOTDSC/GE-301T/141**

**TDC (CBCS) Odd Semester Exam., 2023**

**BOTANY**

**( 3rd Semester )**

**Course No. : BOTDSC/GE-301T**

**( Plant Anatomy and Embryology )**

Full Marks : 50

Pass Marks : 20

*Time : 3 hours*

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

**SECTION—A**

**Answer *fifteen* questions, selecting any *three* from  
each Unit : 1×15=15**

**UNIT—I**

- 1. Who proposed apical cell theory?**
- 2. Define quiescent centre.**
- 3. Write important functions of sclerenchyma.**

( 2 )

4. Name the elements of xylem.

UNIT—II

5. What is cork cambium?

6. What is lenticel?

7. Write the main function of secondary xylem.

8. Define growth rings.

UNIT—III

9. What is cuticle?

10. What do you mean by sunken stomata?

11. Write the scientific name of one free-floating hydrophyte.

12. Define bark.

UNIT—IV

13. Name one family of angiosperms where pollinia are present.

14. What are two main cells of a matured pollen grain?

( 3 )

15. Define anatropous ovule.

16. What is endosperm?

UNIT—V

17. What is haustorium?

18. Define helobial endosperm.

19. What is aleurone layer?

20. What is the chromosome number of endosperm?

SECTION—B

Answer *five* questions, selecting *one* from each

Unit : 2×5=10

UNIT—I

21. Write important features of meristematic tissues.

22. Write important functions of vascular tissues.

( 4 )

UNIT—II

23. Differentiate between fascicular and inter-fascicular cambium.
24. What do you mean by heartwood and softwood?

UNIT—III

25. Write the important functions of epidermis.
26. Name the various types of stomata.

UNIT—IV

27. Mention the essential parts of a matured ovule.
28. Write the salient features of entomophilous flowers.

UNIT—V

29. Write a brief note on the structure of dicot embryo.
30. Give an account on octant formation.

( 5 )

SECTION—C

Answer *five* questions, selecting *one* from each  
Unit : 5×5=25

UNIT—I

31. Define meristem. Classify meristematic tissues based on position. What is histogen?  
1+3+1=5

32. Write a brief note on secretory tissues. Name the elements of phloem with their functions.

UNIT—II

33. What is cambium? Write the functions of cambium. Give an account of the origin of vascular cambium.  
1+1+3=5
34. What is secondary growth? How does secondary growth take place in dicotyledonous stem?  
2+3=5

UNIT—III

35. Define hydrophyte. What are the various features of adaptation found in hydrophytes?  
2+3=5
36. What do you mean by physical and physiological xerophytes? Write important adaptations found in xerophyte.  
2+3=5

UNIT—IV

37. Write note on ultrastructure of a mature embryo sac. What do you mean by double fertilization and triple fusion? 3+2=5
38. What are the various contrivances for cross-pollination? Write note on tetrasporic type of embryo sac developments. 3+2=5

UNIT—V

39. Write the structure and development of monocot embryo. Mention the structure and functions of endosperms. 2+3=5
40. What is polyembryony? What are the causes for polyembryony? Mention the types and applications of polyembryony.

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