

B.Sc. DEGREE EXAMINATION, APRIL 2024
BRANCH V(a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FOURTH SEMESTER

COURSE : MAJOR – CORE
PAPER : ANATOMY AND EMBRYOLOGY OF ANGIOSPERMS
SUBJECT CODE : 19BT/MC/AE44
TIME : 3 HOURS MAX. MARKS: 100

SECTION - A

A. ANSWER THE FOLLOWING 18 Marks

I. Choose the correct answer (1x5=5)

1. A single apical cell is responsible for the development of all the aerial plant parts is called
a) Apical cell theory b) Mantle core theory
c) Tunica carpus theory d) Histogen theory
2. The other name for secondary xylem is
a) stem b) root c) wood d) cortex
3. Anomalous primary growth is seen in
a) *Aristolochia* b) *Bignonia* c) *Leptadenia* d) *Peperomia*
4. Stomata are surrounded by three subsidiary cells having unequal sizes, one is smaller is called
a) Anamocytic b) anisocytic c) paracytic d) diacytic
5. The tetrasporic female gametophyte is
a) *Polygonum* b) *Allium* c) *Peperomia* d) *Bignonia*

II. Fill in the blanks: (1x5=5)

6. The other name for phellem is _____
7. A long and tapered lignified cell in the xylem of vascular plants is called _____
8. Anomalous secondary thickening is seen in _____
9. Leaf abscission occurs during _____
10. The condition in which the endosperm is dissected by in-growths of the seed coat is called _____ endosperm

III. State True or False (1x3=3)

11. Bark is an outer layer, composed of dead cells
12. Lenticel is a loosely-packed mass of cells in the bark of a woody plant
13. Tyloses are overgrowths of the protoplast of adjacent living parenchymatous cells

IV. Match the following (1x5=5)

14. Phelloderm - water
15. Hydathodes - food
16. Xylem - sweet liquid
17. Phloem - cambium
18. Nectaries - epidermis

V. ANSWER ANY SIX OF THE FOLLOWING QUESTIONS IN 50 WORDS EACH:**(6x3=18)**

19. What is Meristem?
20. Write notes on commercial bark
21. Distinguish between wood parenchyma and rays
22. Define resin ducts and laticifers
23. What is Dendrochronology?
24. Write the concept of quiescent centre
25. Differentiate between primary and secondary meristem
26. Differentiate diacytic and paracytic stomata
27. What are simple tissues?

SECTION - B**ANSWER ANY FOUR OF THE FOLLOWING QUESTIONS IN ABOUT 200 WORDS EACH. DRAW DIAGRAMS WHEREVER NECESSARY.****(4x6=24)**

28. Write notes on
 - a. sap wood
 - b. heartwood
 - c. reaction wood
29. Discuss the structure and formation of vascular cambium.
30. What is nodal anatomy? Discuss the types of nodal anatomy
31. Give a brief account on microsporogenesis
32. What are all the different types of endosperms? Mention its functions.
33. Describe the secondary structure of dicot stem

SECTION - C**ANSWER ANY TWO OF THE FOLLOWING QUESTIONS IN ABOUT 1000 WORDS EACH. DRAW DIAGRAMS WHEREVER NECESSARY.****(2x20=40)**

34. Give a detailed account on any four theories of meristem.
35. Summarize the anomalous growth of primary and secondary structures in dicots.
36. Differentiate dorsiventral, isobilateral and centric leaves.
37. Describe the structure and types of ovules and describe megasporogenesis.
