

B.Sc. DEGREE EXAMINATION, APRIL 2017
BRANCH V(a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FOURTH SEMESTER

COURSE : MAJOR – CORE
PAPER : ANATOMY AND EMBRYOLOGY OF ANGIOSPERMS
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION-A

A. ANSWER THE FOLLOWING **18 Marks**
I. Choose the correct answer **(1x5=5)**

1. The innermost layer of the anther is
a. Endothecium b. Tapetum c. Epidermis d. Hypodermis
2. Stone cells are
a. Parenchyma b. Sclerenchyma c. Collenchyma d. Phloem
3. Dendrochronology is the study of
a. Primary tissues b. flowers c. Fruits d. Age of plants
4. Endosperm nucleus is
a. Haploid b. Diploid c. Triploid d. Tetraploid
5. A young anther has _____ microsporangia
a. 2 b. 3 c. 4 d. 5

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

6. The other name for cork cambium is _____
7. In dicot root in between xylem and phloem there is _____
8. In woody dicots _____ wood of the trunk is impregnated with tannins, gum, resins
9. Coconut is the _____ type of endosperm
10. In dicot embryo sac at the chalazal end _____ are present

III. State True or False **(1x4=4)**

11. In dicot anther below the epidermis is present the endothecium
12. The leaves of xerophytic plants have the outer layer epidermis, that is followed by two layers of hypodermis.
13. In monocot root the xylem is endarch
14. In dicot the developing ovule has a nucellus covered by two integuments.

IV. Match the following **(1x4=4)**

- | | | |
|-----------------------|---|-------------------|
| 15. Protoxylem lacuna | - | Calotropis |
| 16. Tapetum | - | Living cells |
| 17. Collenchyma | - | Monocot |
| 18. Latex | - | Nutritive tissues |

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

19. How are cork cells formed?
20. Mention any 3 differences between monocot and dicot roots.
21. What are guard cells?
22. What are tyloses?
23. What are lenticels?
24. What is nucellus?
25. Describe companion cells.
26. What are tracheids?
27. Write about the epidermal hairs found on the leaves.

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

28. Describe the structure of pollen grain (or) Microspore.
29. Give the anatomical details of a centric leaf.
30. What are annual rings?
31. Write about the different types of stomata.
32. Write about the primary thickening meristem of monocots.
33. Describe the xylem tissue.

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

34. Describe and compare the anatomy of Dorsiventral & Isobilateral leaves.
35. Describe double fertilization.
36. Describe the anomalous secondary thickening in *Dracaena* stem.
37. Write an essay on the organization of shoot apex and root apex meristems.
