STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2019 – 2020 & thereafter)

SUBJECT CODE: 19BT/MC/AE44

B.Sc. DEGREE EXAMINATION, APRIL 2023
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. Apical cell theory was postulated by
   (a) Nageli (b) Hanstein (c) Schmidt (d) Dermen
2. Xylem and Phloem are known as
   (a) Simple Tissue (b) Complex tissue (c) Secretory Tissues (d) Compound Tissues
3. Collateral closed vascular bundles are seen in
   (a) Dicot Root (b) Monocot Root (c) Dicot Stem (d) Monocot Stem
4. A pair of subsidiary cells that lie parallel to the guard cells is
   (a) Diacytic (b) Paracytic (c) Tetracytic (d) Anamocytic
5. Monosporic eight nucleated female gametophyte is seen in
   (a) *Allium* (b) *Polygonum* (c) *Peperomia* (d) *Cucurbita*

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

6. The cork tissues are produced by _____.
7. The wall of the xylem produces balloon outgrowth into the lumen of the vessels called _____.
8. The casparian strips are made up of _____ deposits.
9. The phenomenon of detachment of the leaf from the stem is called _____.
10. One male nucleus in pollen tube and secondary nucleus in the embryo sac fuses and develop into _____.

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

11. Xylem Fibres are also called as bast fibres.
12. Dorsiventral leaf is a characteristic feature of monocots.
13. Polyembryony is referred to as the development of two or more embryos from a single fertilized egg.

IV. Match the following (1x5=5)

14. Sclerenchyma	-	Axial System
15. Centric Leaf	-	Exarch
16. Ray Parenchyma	-	*Allium*
17. Dicot root	-	Duramen
18. Heart Wood	-	Lignin

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

19. Lenticels
20. Quiescent centre
21. Dendrochronology
22. Actatostele
23. Amphivasal vascular bundle
24. Trilacunar Node
25. Trichome
26. Double fertilization
27. Ruminate endosperm

SECTION - B

ANSWER ANY FOUR OF THE FOLLOWING QUESTIONSIN ABOUT 200 WORDS EACH. DRAW DIAGRAMS WHEREVER NECESSARY. (4x6=24)

28. Elucidate the structure of vascular cambium
29. Summarize the structure and function Xylem vessels.
30. List the different stomatal types.
31. Explicate the structure of microsporangium.
32. Describe the primary structure of Dicot stem.
33. Expound Histogen theory.

SECTION - C

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

34. Give an account on the structure, types and function of Parenchyma & Collenchyma.
35. Explain various types of secretory tissues seen in plants.
36. Elaborate anomalous growth in *Nyctanthes* and *Bignonia*
37. Describe the development of Dicot embryo.

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