

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**

**(For candidates admitted from the academic year 2004-05 thereafter)**

**SUBJECT CODE: BT/MC/AA44**

**B.Sc. DEGREE EXAMINATION, APRIL 2008**

**BRANCH V(a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY  
FOURTH SEMESTER**

**COURSE : MAJOR – CORE**

**PAPER : ANATOMY OF ANGIOSPERMS**

**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION –A**

**ANSWER ALL QUESTIONS**

**I. CHOOSE THE CORRECT ANSWER: (8 MARKS)**

1. Tissue formed as a result of wounding  
a) Callose      b) Callus      c) Coenocyte      d) Crassulate
2. A lateral meristem which undergoes mostly periclinal division  
a) Interfascicular cambium    b) Fascicular cambium    c) Wound cambium  
d) Vascular cambium.
3. A specialized parenchyma cell associated with sieve tube elements  
a) Companion cell    b) Cork cell    c) Complementary cell    d) Lenticel
4. The author of Histogen Theory  
a) Hanstein      b) Schmidt      c) Popham      d) Nageli
5. Development of cells from juvenile state to mature one.  
a) Differentiation      b) De-differentiation      c) Re-differentiation  
d) Specialization
6. A plate having single large perforation  
a) Foraminate    b) Reticulate      c) Scalariform      d) Simple
7. Circular depressions contain minute pores lined with callose  
a) Sieve plate    b) Sieve area      c) Sieve cell      d) Sieve tube
8. Arrangement of subsidiary cells parallel with long axis of the guard cells  
a) Anomocytic    b) Anisocytic      c) Paracytic      d) Diacytic

**II. MATCH THE FOLLOWING: (5 MARKS)**

- |                       |   |                              |
|-----------------------|---|------------------------------|
| 9. <i>Quercus</i> sp. | - | C <sub>4</sub> Plant         |
| 10. <i>Tectona</i> sp | - | Commercial cork              |
| 11. Phellogen         | - | Timber                       |
| 12. Rhizodermis       | - | Secondary protective tissue. |
| 13. Kranz tissue      | - | Root                         |

**III. FILL IN THE BLANKS: (5 MARKS)**

14. Vascular bundle in which xylem surrounding phloem\_\_\_\_\_.
15. Vascular cambium in which fusiform initials are not in horizontal tiers\_\_\_\_\_.
16. Brachysclerids are also known as \_\_\_\_\_.
17. A ray composed of only one type of cells\_\_\_\_\_.
18. Growth layer produced during a year\_\_\_\_\_.

**IV. ANSWER ANY SIX IN 50 WORDS: ( 6 x 3 = 18 )**

19. Eustele.
20. Bicollateral Vascular Bundle.
21. Centric leaves.
22. Dendrochronology.
23. Pericycle.
24. Fibre – tracheid.
25. Cortical bundles.
26. Procambium.
27. Leaf abscission.

**SECTION – B**

**V. ANSWER ANY FOUR IN 200 WORDS EACH:  
DRAW DIAGRAMS WHEREVER NECESSARY ( 4 x 6 = 24 )**

28. Describe the internal structure of Isobilateral leaf?
29. Distinguish between a tracheid and vessel element?
30. Compare and contrast heartwood with sapwood?
31. Describe any four major stomatal types?
32. Explain the structure and activity of vascular cambium?
33. Describe different types of Sclereids?

**SECTION - C**

**VI. ANSWER ANY TWO IN 1000 WORDS EACH:  
DRAW DIAGRAMS WHEREVER NECESSARY ( 2 x 20 = 40 )**

34. Enumerate the structure and organization of phloem?
35. Describe the anomalous secondary growth in dicot stem with suitable examples?
36. Draw and describe the structure and organization of secondary xylem.
37. Explain the theories concerned with shoot apical meristem?

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