

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY & PLANT BIO-TECH.

THIRD SEMESTER – NOVEMBER 2007

PB 3504 - CELL BIOLOGY & ANATOMY

AE 6

Date : 31/10/2007
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

PART – A (20 marks)

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

1. The U.V filter present in the fluorescent microscope is
a) Cedar wood oil b) Porphyrin c) quartz d) autofluorescence.
2. Homogenous, transparent acidophilic sap present in the nucleus is
a) Chromosome b) Karyolymph c) chromatid d) karyotheca.
3. Anisocytic Stomata is seen in
a) *Hibiscus* b) *Ixora* c) *Oryza* d) *Solanum*.
4. A bunch of crystals which constitute the cystolith is
a) calcium carbonate b) calcium sulphate c) calcium oxalate d) calcium chloride.
5. The nongranular peripheral part of cytoplasm is known as
a) hyaloplasm b) ectoplasm c) endoplasm d) kinoplasm.

II. State whether the following statements are True or False (5 x 1 = 5)

6. Oxysomes are the minute particles present in mitochondria outer membrane.
7. The mesophyll tissue is not differentiated in dorsiventral leaf.
8. Sclerenchyma fibres associated with phloem are called bast fibres.
9. The main axis of Lamp brush chromosome containing a series of thickening is called chromomeres.
10. In compound microscope, the light intensity is controlled by annular diaphragm.

III. Complete the following (5 x 1 = 5)

11. Chromatin reticulum of nucleus remains condensed as darkly stained chromatin mass known as _____.
12. Bone shaped sclereids are _____.
13. Vascular bundles are collateral and closed in the stems of _____.
14. The tips of chromosomes are called _____.
15. The intercellular matrix located between the adjacent cells is _____.

IV. Answer the following in about 50 words (5 x 1 = 5)

16. What are Peroxisomes?
17. Distinguish between sclerenchyma and parenchyma.
18. What are Tyloses?
19. Comment on Phagocytosis and Pinocytosis.
20. State the Principles of Dark field microscope.

PART – B

(5 X 8 = 40)

Answer any FIVE of the following in about 350 words. Draw necessary diagrams

21. Explain briefly the working principles and the components of SEM.
22. Describe the ultra structure and function of the endoplasmic reticulum.
23. Explain briefly the various stages of mitosis.
24. Describe the chemical composition of chromosome.
25. Discuss the anomalous secondary growth of *Dracaena* stem.
26. Give an outline of the classification of meristems.
27. Write short notes on cell cycle; G₁, S and G₂ Phases.
28. Describe briefly the theories on Apical meristem.

PART – C

(2 X 20 = 40)

29. a). Explain the Ultra Structure and function of the Nucleus
(OR)
b). Explain the Various Stages of meiosis. Add a note on its significance.
30. a). Explain the normal secondary thickening in Dicot Stem
(OR)
b). Explain the following
 - i). Xylem tissue
 - ii). Structure of isobilateral leaf
