

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – November 2009

PB 3508/PB 3504/PB 4505 - CELL BIOLOGY AND ANATOMY

Date & Time: 06/11/2009 / 9:00 - 12:00 Dept. No.

Max. : 100 Marks

PART – A (20 Marks)

I. Choose the correct answer.

(5 x 1 = 5)

1. In a microscope, oil is used to increase the
(a) numerical aperture (b) Resolution (c) refractive index
(d) Magnification.
2. The darkly staining region of the chromatin reticulum is called
(a). Euchromatin (b). Heterochromatin (c). Chromomere
(d). Centromere
3. During mitosis, doubling of DNA occurs in the
(a). interphase stage (b). Prophase stage (c). Metaphase stage
(d). anaphase stage.
4. In grasses, bigger cells present in the epidermis is known as
(a). bulliform cells (b). Epidermal cells (c). stomatal cells
(d). spongy parenchyma.
5. The living cells of xylem are
(a). Tracheids (b). vessels (c). fibres (d). Parenchyma

II. State true or false, if false give reason.

(5 x 1 = 5)

6. Danielli and Davson proposed the fluid mosaic model.
7. F₁ particles are seen in the inner surface of mitochondria.
8. Pairing and synapsis occurs between heterologous chromosomes.
9. Aerenchyma tissue is present in Xerophytes.
10. Closed vascular bundles are seen in dicot stem.

III Complete the following.

(5 x 1 = 5)

11. Synthesis of lipids occurs in the _____.
12. The histones are the _____.
13. In meiosis, the synapsis occurs in the _____.
14. Unifacial leaf is also known as _____.
15. In the secondary growth of *Draceana*, cambial layer arise from the _____.

IV. Answer the following within 50 words.

(5 x 1 = 5)

16. What are cell inclusions?
17. Write about idiogram.
18. Describe the structure of meristematic cell.
19. Describe apical cell theory.
20. What is an isobilateral leaf?

PART – B

(5 x 7 = 35)

Answer the following within 350 words, draw the diagram whenever necessary

21. a). Describe the principle and working mechanism of phase contrast microscopy.
[Or]
b). Explain the structure and function of mitochondria.
22. a). Briefly describe shape and types of chromosomes.
[Or]
b). What is karyotyping? Write about its importance.
23. a). What is cell cycle? Write about its stages.
[Or]
b). Briefly explain the different types of permanent tissues.
24. a). Describe the types of meristems.
[Or]
b). Explain Tunica Carpus and histogen theory.
25. a). Differentiate primary structure of dicot and monocot stem.
[Or]
b). Write about the anomalous secondary growth in *Bignonia*.

PART – C

(3 X 15 = 45)

Answer any THREE questions.

Each answer within 1200 words, draw the diagram wherever necessary

26. Describe the construction and working mechanism of TEM.
27. Briefly explain the structure of giant chromosomes.
28. Summarise the important events of meiosis.
29. Describe the differentiation of dicot stem and root.
30. Explain normal secondary growth in dicot stem.

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