



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – NOVEMBER 2011

PB 3508/PB 3502 - CELL BIOLOGY AND ANATOMY

Date : 03-11-2011
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

PART-A

(20 marks)

Answer all the questions:

I. Choose the correct answer

(5x1=5)

- Oxidative phosphorylation takes place in the
a) Chloroplast b) Mitochondria
c) Golgi d) Endoplasmic reticulum
- When the karyotype of the species is represented by a diagram it is called
a) Idiogram b) Kinetochore c) Satellite d) Centromere
- The longest phase in Meiosis I is
a) Metaphase b) Prophase c) Anaphase d) Telophase
- Apical cell theory was proposed by
a) Esau b) Nageli c) Pophem d) Clowes
- The vascular bundles are open and arranged in a ring in
a) Monocot root b) Monocot stem c) Dicot stem d) Dicot root

II. State whether the following statements are True or False **(5x1=5)**

- Smooth Endoplasmic reticulum is associated with synthesis of Lipids.
- Purine is a single ringed structure.
- Collenchyma gets thickened due to the deposition of pectin.
- Quiescent centre is seen in leaf apex.
- Amphivasal bundles are seen in Dracaena.

III. Complete the following

(5x1=5)

- _____ are made up of RNA and protein.
- Puffs and bands are seen in _____ chromosome.
- The tissue meant for secondary growth is _____.
- Meristem found between mature tissues is called _____.
- Ranunculaceous type of stomata is also called as _____.

IV. Answer the following each in 50 words

(5x1=5)

- Write the principle in Dark field microscope
- What are metacentric chromosomes?
- What is Amitosis?
- Define a Bicollateral vascular bundle.
- What is a unilacunar node?

PART-B

(5x7=35marks)

Answer

any three of the following questions in about 350 words.
wherever necessary.

Draw diagrams

21. a) Describe the functions of the ER.
or
b) Describe the structure and functions of the plasma membrane.
22. a) Comment on the Lampbrush chromosome
or
b) Discuss the different shapes of chromosomes.
23. a) Describe the stages of mitosis.
or
b) Write notes on secretory cells.
24. a) Explain meristems according to their position and function.
or
b) Describe the Korper Kappe theory of root apex.
25. a) Give an account of the anatomy of Dorsiventral leaf.
or
b) Discuss the different types of nodal anatomy.

PART-C

(3x15=45marks)

Answer any three of the following, each answer not exceeding 1200 words. Draw diagrams wherever necessary.

26. Describe the abnormal secondary growth in any one Dicot and one monocot stem
27. Explain the ultrastructure of the Chloroplast.
28. Describe in detail the theories put forward to explain the organization of the shoot apex.
29. Discuss the structure of Chromosomes.
30. Define tissues and bring out the structure and function of simple tissues.
