



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**

**SECOND SEMESTER – APRIL 2015**

**PB 2506 - CELL BIOLOGY AND EVOLUTION**

Date : 17/04/2015

Dept. No.

Max. : 100 Marks

Time : 01:00-04:00

**PART – A (10 x 2 = 20 marks)**

**ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS ONLY.**

01. Mention the role of condenser in light microscope.
02. Define prokaryotic cell.
03. What are F<sub>1</sub> particles?
04. Distinguish between 70s and 80s ribosomes.
05. What is nucleotide?
06. Define ideogram.
07. What is amitosis?
08. Write notes on closed and open mitosis.
09. Define organic evolution.
10. Define speciation.

**PART – B (5 x 7 = 35 marks)**

**ANSWER THE FOLLOWING, EACH WITHIN 500 WORDS.  
DRAW DIAGRAMS WHEREVER NECESSARY.**

- 11a. Explain the working principle and applications of SEM.  
(OR)  
b. Write an account on the working principle and uses of dark field microscope.
- 12a. Describe the ultrastructure of chloroplast.  
(OR)  
b. Give an illustrated account of Endoplasmic reticulum.
- 13a. Describe the different kinds of RNA and write their functions.  
(OR)  
b. Write notes on Lamp brush chromosome.
- 14a. Explain the sub-stages of prophase I of meiosis.  
(OR)  
b. Describe the phases of cell cycle.
- 15a. What is mutation theory? Explain.  
(OR)  
b. Write an account on evolution as explained by Lamarkism.

**PART – C (3 x 15 = 45 marks)**

**ANSWER ANY THREE OF THE FOLLOWING, EACH WITHIN 1200 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY.**

16. Give an illustrated account of a typical eukaryotic plant cell.
17. Explain the structure and function of cell wall.
18. Enumerate the structural organization of chromosome.
19. Describe the various stages of mitotic division. How does it differ from meiosis?
20. Discuss Darwin's theory of natural selection. Add a note on Neo-Darwinism.

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