



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

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

**THIRD SEMESTER – APRIL 2019**

**16/17UPB3MC02– CELL BIOLOGY AND EVOLUTION**

Date: 25-04-2019  
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

**PART – A**

*Answer the following, each within 50 words.*

*(10 × 2 = 20 marks)*

1. What is Tyndall's effect?
2. Mention the applications of phase contrast microscope.
3. What are autophagosomes?
4. Comment on nuclear pore complex.
5. Define telomere.
6. What is karyotyping?
7. What is synapsis?
8. Define amitosis.
9. What do you mean by molecular evolution?
10. What is Neo-Darwinism?

**PART – B**

*Answer the following, each within 500 words. Draw diagrams wherever necessary.*

*(5 × 7 = 35 marks)*

11. a. Explain briefly about the structure of an eukaryotic cell.  
(or)  
b. Give an account on the principle and uses of Dark field microscope.
12. a. Write an account on the structure and function of chloroplast.  
(or)  
b. Describe the structure of nucleus. Add a note on its function.
13. a. Explain the structure of chromosome.  
(or)  
b. Give an account on polytene chromosomes.
14. a. Write short notes on cell cycle.  
(or)  
b. Explain briefly about the stages of mitosis.
15. a. Give a brief account on Mutation theory.  
(or)  
b. Write short notes on Lamarckism.

**PART – C**

**Answer any three of the following, each within 1200 words. Draw diagrams wherever necessary.**

**(3 × 15 = 45 marks)**

16. Write an essay on the sample preparation, principle and application of TEM.
17. Describe the structure and function of mitochondria.
18. Discuss in detail about the types of RNA.
19. Give an account on the stages of Meiotic division.
20. Explain about the process and mode of speciation.

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