

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



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

THIRD SEMESTER – NOVEMBER 2017

16UPB3MC02 – CELL BIOLOGY AND EVOLUTION

Date: 07-11-2017

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

PART – A

ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS.

(10×2= 20 Marks)

1. What is resolving power?
2. Define an incipient nucleus.
3. What are grana?
4. What are ribosomes?
5. What is Teleomere?
6. What are Histones?
7. Write a note on Metaphase chromosome.
8. Define Amitosis.
9. What do mean by “survival of the fittest”?
10. Define speciation.

PART – B

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

(5×7= 35 Marks)

11. a) Write the principle, working mechanism and applications of dark field microscope.
(OR)
b) How prokaryotic cell differ from a eukaryotic cell?
12. a) Discuss the fluid mosaic model of plasma membrane.
(OR)
b) Brief about the organization of nucleus.
13. a) What are polytene chromosomes? Explain its structure.
(OR)
b) Describe the organization of chromosome.

14. a) Describe the various phases of cell cycle.

(OR)

b) Explain sequential stages of mitosis with diagrams.

15. a) Explain Lamarckism in evolution.

(OR)

b) Explain Neo-Darwinism theories in evolution.

PART – C

ANSWER ANY THREE OF THE FOLLOWING, EACH WITHIN 1200 WORDS. DRAW DIAGRAMS AND FLOWCHARTS WHEREVER NECESSARY. **(3×15= 45 Marks)**

16. Write in detail the principle of an electron microscopy and add a note on its types.

17. Explain how mitochondrial structural organization helps in its function.

18. Define ideogram and explain how karyotype helps in its preparation?

19. Describe the various stages of Meiosis.

20. Explain the concept of speciation and isolation according to synthetic theory.
