LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

SECOND SEMESTER – **NOVEMBER 2016**

PB 2506 – CELL BIOLOGY AND EVOLUTION

Date: 14-11-2016   Dept. No.   Max. : 100 Marks
Time: 01:00-04:00

PART – A

ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS ONLY   **(10×2= 20)**

1. Define resolving power.
2. Write the nuclear difference between prokaryotic & eukaryotic cells.
3. Give the functions of lysosomes.
4. What are F1 particles?
5. Define karyotype.
6. Mention the importance of telomere.
7. What are Cyclins?
8. Define amitosis.
9. Define the term "survival of the fittest".
10. Comment on speciation.

PART – B

ANSWER THE FOLLOWING, EACH ANSWER WITHIN 500 WORDS, DRAW
DIAGRAMSWHEREVER NECESSARY   **(5×7= 35)**

11. a) Write the principle and working mechanism of phase contrast microscope.

(OR)

   b) Brief the working principle and applications of dark field microscope.

12. a) Describe the fluid mosaic model of a plasma membrane.

(OR)

   b) Describe the ultra structure of a chloroplast.

13. a) Describe the different types of chromosomes.

(OR)

   b) Describe the organization of nucleic acid with histones.

14. a) Describe the different phases of mitosis.

(OR)

   b) Explain the stages of cell cycle.

15. a) Explain Lamarck's theory of organic evolution.

(OR)

   b) Explain Darwinism and Neo-Darwinism theories in evolution.

PART – C

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

16. Write details on the principle, working mechanism and applications of TEM and SEM.

17. With neat labeled diagram, describe the structural details of a nucleus.

18. Write notes on organization of Lampbrush and polytene chromosomes.

19. Explain the different stages of Meiosis I.

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

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