LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – **NOVEMBER 2017**

PB 3508 – CELL BIOLOGY AND ANATOMY

Date: 09-11-2017 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART –A

ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS. (10x2=20 Marks)

1. What are lysosomes?
2. State the principles of Scanning Electron Microscope.
3. Define Centromere.
4. What is a histone?
5. What happens during the S phase of a cell cycle?
6. What are Lacticiferous tissues?
7. Name the components of xylem and phloem.
8. Mention the location and function of lateral meristem.
9. Define a leaf trace.
10. What are anisocytic stomata? Give an example.

PART –B

ANSWER THE FOLLOWING, EACH WITHIN 500 WORDS. DRAW DIAGRAMS AND FLOWCHARTS WHEREVER NECESSARY. (5x7=35 Marks)

11. a) How does a light microscope work? List all the components.

(OR)

b) Elucidate on the structure of mitochondria.

12. a) Classify chromosomes based on the location of the centromere.

(OR)

b) Highlight on the structure of polytene chromosome.

13. a) Give an account on the composition of plant cell wall.

(OR)

b) Outline the steps involved in the process of mitosis.

14. a) Summarize the work of Henstein with reference to Histogen theory.

(OR)

b) Write briefly about the types and functions of vascular cambium.

15. a) Describe the anatomy of a dorsiventral leaf.

(OR)

b) Explain the anatomical features of a monocot stem.

PART –C

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

(3x15=45 Marks)

16. Explain in detail the fluid mosaic model of Plasma membrane. Add a note on its function.

17. With respect to nucleic acids answer the following:

i) Nucleotide ii) Nitrogenous base iii) Pentose sugar

18. Describe the stages of the cell cycle.

19. Give an account on the different types of concentric and conjoint vascular bundles. Add a note on the functions of vascular bundles.

20. Explain anomalous secondary growth in *Bignonia and Dracaena*.

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