



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – NOVEMBER 2022

UPB 1501 – CELL BIOLOGY AND EVOLUTION

Date: 24-11-2022

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

PART – A

Answer the following, each within 50 words.

(10 x 2 = 20 marks)

1. Give the significances of cell theory.
2. Mention the functions of diaphragm of a microscope.
3. Comment on lysosomes in plants.
4. Mention the components of ribosomes.
5. Cite the importance of karyotype.
6. List the significances of telomere.
7. Draw diagram showing amitosis.
8. Brief note on interphase cell.
9. Define the theory of spontaneous generation.
10. Write note on concept of speciation in evolution.

PART – B

Answer the following, each within 500 words. Draw diagrams / flow charts wherever necessary.

(5 x 7 = 35 marks)

11. (a) Enumerate the physical and biological properties of cytoplasm.
(or)
(b) Draw the ray diagram and compile the components and applications of fluorescent microscope.
12. (a) Explain the ultra-structure of chloroplast. List the functions.
(or)
(b) Describe the organization of plasma membrane. Mention its functions.
13. (a) Discuss the details on the chemical composition of chromosomes.
(or)
(b) Illustrate and explain the morphology of chromosomes.
14. (a) Highlight the details on the various stages of mitotic cell division.
(or)
(b) Elaborate with diagrams on the phases of cell cycle.
15. (a) With suitable examples, describe Lamarckian theory of evolution.
(or)
(b) Describe Darwinian theory of evolution with suitable examples.

PART – C

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

(3 x 15 = 45 marks)

16. Give the details on the parts of a microscope of your regular practical lab.
17. Describe the ultrastructure, chemical composition and functions of plant cell wall.
18. Write detailed notes on the molecular organization of giant chromosomes.
19. Illustrate and explain the substages of Meiosis - I.
20. Write an essay on synthetic theory of evolution.

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