

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



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

THIRD SEMESTER – APRIL 2023

16/17/18UPB3MC02 – CELL BIOLOGY AND EVOLUTION

Date: 04-05-2023

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 endosymbiotic theory.
2. Mention the functions of fluorescent dyes.
3. Comment on peroxisomes in plants.
4. Mention the components of golgi bodies.
5. Cite the importance of idiogram.
6. List the significances of topoisomerase.
7. Draw diagram showing metaphase.
8. Brief note on interphase cell.
9. Comment on mutation theory.
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 salient features of a prokaryotic cell.
(or)
(b) Draw the ray diagram and compile the components and applications of bright field microscope.
12. (a) Explain the ultra-structure of mitochondria. List the functions.
(or)
(b) Describe the organization of endoplasmic reticulum. Mention its functions.
13. (a) Discuss the details on the molecular organization of a chromosome.
(or)
(b) Highlight the construction and significances of Karyotype.
14. (a) Illustrate with details on cell cycle. Mention check points
(or)
(b) Elaborate with diagrams on the mitotic abnormalities.
15. (a) With suitable examples, describe Neo-Lamarckism.
(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 scanning electron microscope and mention its applications.
17. Describe the ultrastructure, chemical composition and functions of plasma membrane.
18. Write detailed notes on the special types of chromosomes.
19. Illustrate and explain the substages of Meiosis - I.
20. Write an essay on isolating mechanism in evolution.

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