



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – NOVEMBER 2022

UPB 3502 – MICROBIOLOGY

Date: 03/12/2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART – A

Answer the following, each within 50 words.

(10 x 2 = 20 marks)

1. Give the details on Whitaker's 5 kingdom concept.
2. What is simple staining? Give example.
3. Comment on the structure and functions of pili.
4. Mention the components of nutrient agar.
5. What are the applications of cellulase enzyme?
6. Give a brief note on RUBISCO.
7. Cite the importance of Hfr cell.
8. List the factors that induce competency.
9. Mention the important features of viruses.
10. Name any 2 vaccine production units found in Tamil nadu.

PART – B

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

(5 x 7 = 35 marks)

11. (a) Describe in detail on the capsular staining method.
(or)
(b) Enumerate and explain the scopes and applications of microbiology.
12. (a) Explain the different phases of normal growth curve during batch culture.
(or)
(b) Describe various types of bacteria based on their physical condition requirements.
13. (a) Illustrate and explain the cyclic and non-cyclic photophosphorylation in eukaryotes.
(or)
(b) With schematic diagram, explain anaerobic respiration from glucose to ethanol.
14. (a) Highlight the details on the lytic life cycle of temperate phages.
(or)
(b) Elaborate on the experimental evidence for bacterial transformation.
15. (a) Describe the cultivation methods for viruses.
(or)
(b) Outline the types of vaccines, against various viral diseases.

PART C

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

(3 x 15 = 45 marks)

16. Schematically explain the differential staining with reference to Gram's staining.
17. Explicate the ultrastructure of a bacterial cell.
18. Write detailed notes on the dark reactions of bacterial photosynthesis.
19. Illustrate and explain the process of bacterial conjugation.
20. Write an essay on classification of viruses according to Baltimore.

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