# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – **NOVEMBER 2022**

**17/18UPB3MC01 – MICROBIOLOGY**

Date: 24-11-2022 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 contributions of Robert Koch.
2. What is negative staining? Give example.
3. Comment on mesosomes.
4. Mention the components of nutrient broth.
5. What are the applications of protease enzyme?
6. Give a brief note on pigments of microbial photosynthesis.
7. Cite the importance of F plasmid.
8. List the significances of transformation.
9. Define virus, virion and viroid.
10. Write note on plaque forming units.

## PART – B

**Answer the following, each within 500 words. Draw diagrams / flow charts wherever necessary.**
**(5 x 7= 35 marks)**

11. (a) Describe Carl Woese's 6 kingdom classification with examples

(or)

(b) Enumerate and explain the scopes of microbiology.

12. (a) Explain the normal and synchronous growth curve.

(or)

(b) Describe bacterial classification based on nutritional requirements.

13. (a) Bring out the details on the microbial enzymes and their applications.

(or)

(b) With schematic diagram, explain anaerobic respiration.

14. (a) Highlight the details on the lytic life cycle of temperate phages.

(or)

(b) Elaborate on the prokaryotic gene regulation using *lac* operon model.

15. (a) Describe the classification of virus according to Baltimore system of classification.

(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. Elaborate on differential staining with reference to Gram's staining.
17. Explicate the ultrastructure of prokaryotic cell.
18. Write detailed notes on the bacterial photosynthesis.
19. Illustrate and explain the process of bacterial conjugation.
20. Write an essay on cultivation methods for viruses.

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