LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

SIXTH SEMESTER – **APRIL 2023**

UPB 6502 – MICROBIAL TECHNOLOGY

Date: 03-05-2023 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. Define alcoholic fermentation.
2. What is cryopreservation?
3. Write about impellers.
4. Define ultrafiltration.
5. What are the advantages of *Spirulina*?
6. Write about idly batter.
7. Mention the source and mode of action of penicillin.
8. What are attenuated vaccines?
9. Write about the uses of amylase.
10. Write any two applications of citric acid?

PART – B

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

(5 x 7 = 35 marks)

11. (a) Write about the methods of production of recombinant products.

[OR]

(b) Discuss the methods to improve the industrially important microorganisms.

12. (a) Explain the structure and applications of airlift bioreactors.

[OR]

(b) Summarise the basic requirements of culture media.

13. (a) Write about the advantages of traditional fermented foods.

[OR]

(b) Describe the method of beer production.

14. (a) Write an account on steroid biotransformation.

[OR]

(b) Explain the method of streptomycin production.

15. (a) Write an account on exopolymer production and its applications.

[OR]

(b) Summarise the advantages of biofertilizers and its environmental significance.

PART – C

Answer any THREE of the following, each within 1200 words. Draw diagrams / flowcharts wherever necessary. (3 x 15 = 45 marks)

16. Describe the method of production of biomass and enzymes from microbes.

17. Illustrate the structure of a CSTR.

18. Write an essay on the mass cultivation of *Spirulina*.

19. Explain the industrial production of vitamin B12.

20. Describe the industrial scale production of L-glutamic acid.

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