

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



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

SIXTH SEMESTER – APRIL 2018

PB 6613– MICROBIAL TECHNOLOGY

Date: 19-04-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART A

Answer the following, each within 50 words:

(10×2=20marks)

1. What is a primary metabolite?
2. Define microbial transformation.
3. Comment on macronutrients and trace elements.
4. What are steam traps and valves?
5. What is yogurt? Mention the microbe used in its production.
6. Define biomass production.
7. What are recombinant proteins?
8. What are steroids? Give examples.
9. What are biopolymers and bioplastics?
10. Mention the applications of glutamic acid.

PART B

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

(5×7=35marks)

11. (a) Explain the methods used in the preservation of industrially important microbes.

OR

(b) Write notes on recombinant products from microbes.

12. (a) Explain any one type of fermentor in detail.

OR

(b) What are agitators and aerators? Explain their importance.

13. (a) Explain the production of SCP from *Spirulina*.

OR

(b) Write notes on mycoprotein.

14. (a) Discuss the industrial production of vitamin B₁₂.

OR

(b) What is antibiotic? Explain the industrial production of penicillin.

15. (a) What is a biofuel? Explain how it is produced.

OR

(b) Give the protocol for synthesis of citric acid using microbes.

PART C

Answer any three of the following, each within 1200 words. Draw diagrams and flowchart wherever necessary: (3×15=45marks)

16. Explain the range of products obtained from fermentation process using examples.

17. Write an essay on downstream processing in industrial biotechnology.

18. Explain the fermentation process for beer and wine production.

19. What is a vaccine? Explain the industrial production of Hep B vaccine.

20. Discuss the industrial production of protease and lipase from microbes.
