



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY & ADV. ZOOLOGY

FOURTH SEMESTER – APRIL 2017

PB 4210- MICROBIAL BIOTECHNOLOGY

Date: 29-04-2017
09:00-12:00

Dept. No.

Max. : 100 Marks

Part- A

(10 x 2 = 20 marks)

Answer the following, each within 50 words.

1. What are restriction enzymes?
2. Name any two recombinant products and its importance.
3. Define fermentation.
4. What are impellers?
5. What is penicillin?
6. Cite any 2 roles of vitamins.
7. List the organisms used in citric acid and glutamic acid production.
8. Give any 2 uses of microbial proteases.
9. Mention the microbes involved in yogurt preparation.
10. What are bioplastics?

Part – B

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

11. a) Give a brief account on the different types of cloning vectors.
Or
b) Write short notes on Agarose gel electrophoresis.
12. a) Outline the steps involved in the fermentation process.
Or
b) Briefly discuss the steps involved in down stream processing.
13. a) Describe the methodology involved in HBsAg production.
Or
b) Write a short note on streptomycin production.
14. a) Briefly describe the product recovery of citric acid.
Or
b) Describe the microbial production of lipase.
15. a) Outline the fermentation process involved in cheese production.
Or
b) What are biosensors? Explain any two types of sensors.

PART C

Answer any **THREE** of the following, each in about **1200** words, draw diagrams wherever necessary

(3×15 = 45 marks)

16. Explain any five molecular tools involved in gene cloning.
17. Write in detail on the substrates used in fermentation process and methods on strain improvement
18. Give a detailed account on the fermentation of Vitamin B12.
19. Write in detail on glutamic acid production using fermentation.
20. Describe the fermentation process of beer and wine production.

\$\$\$\$\$\$\$\$