



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

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

**FOURTH SEMESTER – APRIL 2016**

**PB 4210 - MICROBIAL BIOTECHNOLOGY**

**(08<sup>th</sup> Batch Onwards)**

Date: 27-04-2016

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

**Part A**

**Answer the following, each within 50 words only**

**(10 × 2 = 20 marks)**

1. What are cloning vectors?
2. Give any 2 features of restriction enzymes.
3. What is fermentation?
4. Define sterilization.
5. Cite the role of insulin.
6. Comment on vitamin B12
7. Define enzyme.
8. What is Biopol?
9. List any 2 roles of *Rhizobium*.
10. What is chymosin?

**PART B**

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

**(5 × 7 = 35 marks)**

11. (a) Write short notes on gene library.

**(Or)**

(b) Explain the process of Southern blotting.

12. (a) Write about the fermentation products in detail.

**(Or)**

(b) Explain how microbial strains can be improved.

13. (a) Give the sources and production of streptomycin.

**(Or)**

(b) Explain the method for production of HepB vaccine.

14. (a) Cite the sources and application of biofertilizers.

**(Or)**

(b) Write notes on the microbial production and application of citric acid.

15. (a) Give an account on biopolymers and its uses.

**(Or)**

(b) Explain the steps involved in mushroom cultivation.

### PART C

Answer any **THREE** of the following, each within 1200 words. Draw diagrams wherever necessary

**(3 × 15 = 45 marks)**

16. Give a detailed account on the Polymerase Chain Reaction.
17. Write in detail on fermentation processes. Add a note on bioreactor design.
18. Give an account on types and sources of antibiotics. Explain production of penicillin.
19. Write notes on the types, sources and applications of microbial enzymes.
20. Discuss SCP as food and feed. Write detailed notes on mass cultivation of *Spirulina*.

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