



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

**B.Sc. DEGREE EXAMINATION – ADVANCED ZOOLOGY AND BIOTECHNOLOGY**

**FOURTH SEMESTER – APRIL 2016**

**PB 4206 - MICROBIAL BIOTECHNOLOGY**

**(07<sup>th</sup> Batch Only)**

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 is downstream processing?
2. Define bioreactor.
3. What is fermentation?
4. Define yogurt.
5. List out any two importance of Vitamin B<sub>12</sub>.
6. Define antibiotic.
7. What is artificial sweetener.
8. Distinguish between intra and extracellular products.
9. Mention the importance of *Azolla* in agriculture
10. What are bio-pesticides?

**PART B**

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

**(5 × 7 = 35 marks)**

11. (a) Explain the principles of fermentation process.

**(Or)**

(b) Explain how microbial strains can be improved.

12. (a) Write notes on cheese production.

**(Or)**

(b) Give a brief account on the cultivation of mushroom.

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

**(Or)**

(b) Explain about the process involved in vitamin B<sub>12</sub> production.

14. (a) Write notes on production of glutamic acid.

**(Or)**

(b) Give an account of amylase production.

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

**(Or)**

(b) Briefly write about types and application of biosensors.

## PART C

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

(3 × 15 = 45 marks)

16. Explain about the structure of a fermentor.
17. Give detailed account of *Spirulina* production.
18. Give an account on types and sources of antibiotics. Explain production of penicillin.
19. Explain about the steps involved in the production of citric acid.
20. What are bio-fertilizers? Explain the methods used in the mass production of any two bio-fertilizers.

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