LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FOURTHSEMESTER – APRIL 2018

PB 4210– MICROBIAL BIOTECHNOLOGY

Date: 02-05-2018 Dept. No. Max. : 100 Marks
Time: 09:00-12:00

PART – A **(10 x 2 = 20 Marks)**

Answer the following, each within 50 words.

1. What are restriction enzymes?
2. Give examples of two transgenic microbes.
3. Comment on enrichment medium.
4. Mention the use of filtration technique.
5. What are antibiotics?
6. Name any 2 products of steroid transformation.
7. What is vinegar?
8. Name two microbial sources of protease.
9. List out the uses of mycorrhizae.
10. What are biopesticides?

PART – B **(5 X 7 = 35 Marks)**

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

11. (a) Explain the technique of Southern blotting.

Or

(b) List out the desirable features of a cloning vector using a suitable example.

12. (a) Explain the carbon and nitrogen source used in large scale fermentation process.

Or

(b) Explain briefly on various steps involved in downstream processing.

13. (a) Discuss the production of Vitamin B_{12}.

Or

(b) Write briefly on the production of HBsAg vaccine.

14. (a) Chart out the steps involved in L –glutamic acid production.

Or

(b) Write notes on the industrial production of amylase enzyme.

15. (a) Briefly write the procedure for mushroom cultivation.

Or

(b) Give an account on types of biosensors and its applications.

PART – C **(3 X 15 = 45 Marks)**

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

16. Give a detailed account on the principles and applications of Polymerase Chain reaction.
17. Explain the various methods for strain improvement in industrial fermentation.
18. Write in detail on the industrial production of penicillin.
19. Discuss the fermentation and downstream processing of citric acid.
20. Elaborate on the mass cultivation of *Spirulina* and mention its applications.

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