STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2005 – 2006 & thereafter)

SUBJECT CODE: ZL/MC/IN64

B. Sc. DEGREE EXAMINATION APRIL 2010
BRANCH VI.A. ADVANCED ZOOLOGY & BIOTECHNOLOGY
SIXTH SEMESTER

COURSE	**:**	**MAJOR –CORE**	
PAPER	**:**	**INDUSTRIAL BIOTECHNOLOGY**	
TIME	**:**	**3 HOURS**	**MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS **(10 X 3 = 30)**

1. Mention the microorganism used for the production of the following:
   a) Gibberellins b) Penicillin c) Pectinase
2. Define: Microencapsulation.
3. Distinguish between
   a) Broad spectrum antibiotics
   b) Narrow spectrum antibiotics
4. Illustrate: A Bioreactor
5. Mention the different types of chromatography for the separation and purification of enzymes.
6. What are the advantages of continuous fermentation?
7. Distinguish between solid substrate and submerged fermentation.
8. Expand:
   a) MFT b) PVC c) BNR
9. What are the factors that affect enzyme Kinetics?
10. What is methanogenesis?

SECTION – B

ANSWER ANY FIVE QUESTIONS **(5 X 6 = 30)**

11. Outline the metabolic pathway for the biosynthesis of citric acid.
12. Describe the production of vitamin B_{12}.

13. Briefly explain the commonly employed techniques for immobilization of enzymes.
14. What are the characteristics and functions of secondary metabolites?
15. Describe the various steps involved in the operation of a bioreactor.
16. Describe briefly the procedure for microbial production of ethanol.
17. Write short notes on: a) Enzyme separation (OR) b) Enzyme purification

SECTION – C

ANSWER ANY TWO QUESTIONS **(2 X 20 = 40)**

18. Write in detail about the various types of Industrial fermenters.
19. Write an essay on the process of SCP production.
20. Give an account of the technology of microbial production of antibiotics. List atleast two organisms and the chief antibiotics produced by them.
21. Write an essay on the Biological waste Treatment methods.

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