

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, FEBRUARY 2009

General Biotechnology

GBT 212—BIOPROCESS TECHNOLOGY

Time : Three Hours

Maximum : 80 Marks

Section A*Answer any **two** questions.*

1. How streptomycin is produced industrially ?
2. How to employ screening techniques for the isolation of desired industrial microbes ? Discuss various levels of screening and its purpose.
3. How Physical, Chemical and Biological parameters are monitored and controlled in fermentation industries ?

(2 x 10 = 20 marks)

Section B*Answer any **ten** questions.*

4. How channeling of air flow causes operation of airlift fermenters ?
5. What are "Continuously Stirred Tank Reactors (CSTRs) ?
6. How heat exchangers are employed in large scale media sterilization ?
7. Compare and contrast solid state fermentation with submerged.
8. Narrate the process of batch filtration with a suitable example.
9. How does "metabolic flux analysis" help in designing large scale medium ?
10. What are the materials used in the construction of a fermenter ? What are the merits and demerits of using them ?
11. How a fermenter is sterilized ?
12. What is the role of precursors in the production of tetracyclins ?
13. What are the bacteria employed for glutamate production ? What is the role of biotin in glutamic acid production ?
14. What is meant by cross flow filtration ? How this system is operated ?
15. What are the two common chromatographic techniques used in recovering microbial products ?

(10 x 5 = 50 marks)

Turn over

Section C

*Answer **all** questions.*

16. Define "Bioprocess Technology".
17. How semi continuous is different from continuous fermentation ?
18. What are "Spray Driers" ?
19. What is meant by "Centrifugal extractor ?
20. What is "decantes centrifuge" ?

(5 x 2 = 10 marks)