

O. C.

C 3084

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Fourth Semester

Biotechnology

BT 1251 — BASIC INDUSTRIAL BIOTECHNOLOGY

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Explain Quantitative Aspects of Cell Growth.
2. Comment on Continuous Culture.
3. Short note on different type of sterilization methods.
4. Applications of Aspartic acid and Acetic acid.
5. Comment on pH and Biomass production in fermentation technology.
6. Define the role genetic engineering in Bioprocess.
7. Give an example for Single Cell Protein and its applications
8. What are aminoglycosides? Explain its applications.
9. Role of air-lift reactor in Plant cell culture.
10. Explain in brief "Animal cell culture".

PART B — (5 × 16 = 80 marks)

11. (a) (i) Overview of Downstream Processing; Centrifugation, Filtration and Ultrafiltration.
(ii) Explain in detail about Oxygen Transfer in Biological Reactors.

Or

- (b) (i) Write a brief note on different fermentation products.
(ii) Explain the principle of a fermenter with clear diagram.

12. (a) (i) Comment on Optimal Feed Rate Control in Optimization of a Primary Metabolite Fermentation Process.

(ii) Describe in detail about acetic acid production with neat diagram.

Or

(b) Describe in detail about Ethanol production with neat diagram and explain about the purification process and its applications in various field.

13. (a) (i) Explain the step involved in the production and Purification of Penicillin from the microbial broth.

(ii) Comment on Interactions Between Fermentation and Recovery.

Or

(b) Explain the steps involved in the production of Vitamins and steroids with one example each.

14. (a) (i) Explain Industrial Production of Cellulases and their applications.

(ii) Explain in brief about Biopesticides.

Or

(b) Describe in detail about Biopreservatives and Biopolymers with relevant examples.

15. (a) Discuss about the production of recombinant proteins with any commercially important protein as examples.

Or

(b) Discuss in detail about the production and various uses of monoclonal antibodies.