



(Pages : 2)

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Reg. No. :

Name :

Seventh Semester B.Tech. Degree Examination, June 2009

(2003 Scheme)

Branch : BIOTECHNOLOGY

03-704 : Downstream Processing (B)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions in Part A.

1. What are the limitations of centrifugation in the separation of biomolecules ?
2. Explain cross-flow filtration.
3. How does a cost-cutting strategy influence the quality of the product ?
4. Explain the use of SDS in downstream operations.
5. Describe a typical ultrafiltration unit with a neat diagram.
6. What do you understand by the term distribution ratio in the context of enrichment operations ?
7. What are the disadvantages of integrated bioprocessing ?
8. Explain the technique of immunosorption.
9. What is the significance of a break-through curve ?
10. Give examples of typical membranes employed in protein purification.

(10×4=40 Marks)

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PART – B

Answer **one** question from **each** Module.

Module – I

11. Enumerate the general procedures employed for the isolation of a fermentation product. Explain with a typical example from the pharmaceutical industry. **20**
12. What are the primary factors affecting separation ? How are they influenced by particle size ? **20**

Module – II

13. Explain
- i) Use of PEG in aqueous two-phase extraction. **10**
 - ii) Salting-out of proteins **10**
14. Explain
- i) Fractional precipitation. **10**
 - ii) Camp Number. **10**

Module – III

15. Explain the basic phenomena underlying four different classes of chromatographic separations. **20**
16. Describe a product recovery train of a typical operation by using a flow diagram. **20**
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