

Printed Pages : 2



EBT-701

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 154701**

Roll No.

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**B. Tech.**

(SEM. VII) (ODD SEM.) THEORY  
EXAMINATION, 2014-15  
**DOWNSTREAM PROCESSING**

Time : 3 Hours]

[Total Marks : 100

**Note :** Attempt all questions.

- 1 Attempt any **Four** parts of the following : **(4×5=20)**
- What is affinity chromatography ? Explain in detail.
  - Differentiate between deferential and density gradient centrifugation.
  - Explain membrane based purification.
  - Describe solid - liquid extraction process.
  - What is zone spreading ? Explain in detail.
  - What is the role of riboflavin and ammonium per sulphate in PAGE ?
- 2 Write short notes on any **four** : **(4×5=20)**
- Purification Factor
  - GLC
  - Reveres Osmosis

- (d) Solvent recovery
  - (e) Cost cutting strategies in DSP
  - (f) Product Polishing.
- 3** Attempt any **two** parts : **(2×10=20)**
- (a) What is Bio-separation ? Describe different methods of recovery of bio-molecules.
  - (b) What is Adsorption ? What is Adsorption isotherm ? Explain different Adsorption processes used in industries.
  - (c) Briefly discuss the various cell disruption method used in industry.
- 4** Attempt any **two** parts : **(2×10=20)**
- (a) Describe the mechanism of ammonium sulphate precipitation method. Why this method is preferred for protein precipitation ?
  - (b) Describe the principle and application of ion exchange chromatography.
  - (c) What is the principle of crystallization ? Explain different types of nucleation processes.
- 5** Attempt any **two** parts : **(2×10=20)**
- (a) What is electrophoresis ? Discuss the set-up of two-dimensional gel electrophoresis for product purification.
  - (b) What is the principle of chromatography technique ? Explain HPLC and techniques of chromatography.
  - (c) Discuss the steps involved in citric acid recovery and purification.
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