

Exam. Code: 0910
Sub. Code: 6318

2023
B.E. (Biotechnology) Sixth Semester
BIO-614: Down Stream Processing

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

1. Answer the following: (2 x 5)
- Very briefly explain concentration polarization at the membrane surface
 - Differentiate between vacuum distillation and steam distillation.
 - Briefly write the principle of affinity chromatography.
 - Differentiate between reducing and non-reducing PAGE.
 - Define distribution coefficient. Give the significance of higher distribution coefficient?

Section A

- 2a) Describe the various stages of downstream processing for the recovery of a biomolecule.
- b) Write a detailed flowchart for production and purification of penicillin. (5, 5)
3. Why is cell lysis important? Give different physico-mechanical methods employed for cell lysis, giving one advantage and one disadvantage of each. (10)
4. Describe the following: Aqueous 2- phase extraction; Rotary vacuum filter (5, 5)

Section B

5. Why is HPLC so important? Describe its components and working. (10)
6. Explain the principle, components and working of capillary electrophoresis. (10)
- 7a) Give the significance of drying in DSP. Also explain the drying curve.
- b) Write notes on: Crystallization, Ultrafiltration (5, 5)

x-x-x