

USN

--	--	--	--	--	--	--	--	--	--

10BT73

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Downstream Process Technology

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. Describe the various methods of bioseparation involved in the manufacturing of Insulin. Explain the problems and requirement of a downstream processing. (10 Marks)
b. Write the importance of downstream processing in Biotechnology and list out the important unit operations used. (10 Marks)
- 2 a. Define Filtration. Explain the principle construction and working of continuous rotary drum filtration. (10 Marks)
b. Classify the types of cell disruption methods. Explain any two methods of cell disruption techniques. (10 Marks)
- 3 a. Explain the principle and the methodology of ISO electric focusing with suitable diagram. (10 Marks)
b. Define ELISA. Comment on its principle and applications. (10 Marks)
- 4 a. Give an account of different types of Adsorbents used in bioseparation. (10 Marks)
b. Enumerate the factors influencing the rate of evaporation. (10 Marks)

PART – B

- 5 a. Discuss the role of reverse osmosis in downstream processing technology. (10 Marks)
b. Differentiate between ultrafiltration and microfiltration. Explain the theory of ultrafiltration with necessary equation. (10 Marks)
- 6 a. What do you understand by salting - out? Highlight the factors governing the choice of salt. (10 Marks)
b. Write a detailed note on aqueous two phase extraction. (10 Marks)
- 7 a. Describe Gas liquid chromatography technique using flame ionization, with a neat diagram. (10 Marks)
b. Explain the working principle of Thin layer chromatography. (10 Marks)
- 8 a. Define the concepts of linear flow rate, volumetric flow rate and residence time in chromatography scale up studies. (10 Marks)
b. Discuss the importance of GLP and GMP in Quality regulatory aspects of products in Downstream Processing technology. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.