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Seventh Semester B.E. Degree Examination, July/August 2022

Novel Separation Techniques

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Discuss the classification of separation process. (10 Marks)
- b. Define adsorption. Give examples. (02 Marks)
- c. With a neat sketch, explain working of any one adsorption operation. (08 Marks)

OR

- 2 With a neat sketch, explain any two types of chromatography techniques. (20 Marks)

Module-2

- 3 a. Explain the working of ultrafiltration. (10 Marks)
- b. With a neat sketch, explain the working of reverse osmosis. (10 Marks)

OR

- 4 Explain types of membranes and modules. (20 Marks)

Module-3

- 5 a. Explain surfactant based separation. (10 Marks)
- b. Write a note on Micellar separations. (10 Marks)

OR

- 6 a. Discuss classification of surfactant. (10 Marks)
- b. Write a short note on liquid membrane permeation. (10 Marks)

Module-4

- 7 a. Define super critical extraction. Discuss importance of super critical extraction. (10 Marks)
- b. Explain super critical extraction with phase diagram. (10 Marks)

OR

- 8 Write short note on: (20 Marks)
 - i) Physical-chemical principles of a supercritical fluid
 - ii) Characteristics of super critical fluids.

Module-5

- 9 With a neat diagram, explain any two types of filtration. (20 Marks)

OR

- 10 With a neat sketch, explain any two types of crystallization. (20 Marks)

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