Enrollment No: _____

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech Mid Semester Exam

Semester: VIth **Date: (01/02/2024)**
Subject Code: (203103383) **Time: (1hr: 30min)**
Subject Name: (Separation Process) **Total Marks: 40**

Sr. No. Marks

Q.1 (A) 05

1. Define separation factor.
2. Name any two solvents used for supercritical extraction.
3. Define Membrane.
4. What do you mean by azeotrope?
5. Name pressure driven membrane separation techniques.

(B) 05

1. Distillation is a _____governed separation technique.
2. Reactive distillation = _____+_____
3. Membrane separation processes are based on the _____ of different components through semi-permeable membranes.
4. The deposition of solute particles on the membrane surface is known as _____.
5. Reactive and catalytic distillation work on _____'s principle.

Q.2 Attempt any four Questions) 12

(1) Name any four separation processes based on phase addition and/or phase creation.

(2) Discuss any two factors affecting the choice of separation processes.

(3) Give important properties of super critical fluid.

(4) Classify membrane based on its structure.

(5) What are the different membrane materials used for the preparation of membrane?

Q.3 Attempt any two questions 08

(1) What is the principle of membrane separation processes? Classify membrane separation processes based on driving force.

(2) Explain concept of process alternatives for selection of separation processes.

(3) Explain extractive distillation with an example.

Q.4 (A) Define membrane module. Explain any two types of modules with neat sketch. 05

(B) Explain the concept of reverse osmosis and also discuss it's application. 05

OR

(B)Explain phase inversion technique for the membrane preparation. 05