Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER - VII • EXAMINATION - WINTER 2012

Subje Time:	ect Nar	e: 170504 ne: New Separation Techniques am - 01.00 pm Total Marks: 70 as:	
	2. Ma	empt any five questions. ke suitable assumptions wherever necessary. ures to the right indicate full marks.	
Q.1	(a)	Explain in detail about principles and different types of membrane separation	07
	(b)	processes with applications of each. Discuss importance of supercritical solvents and principles of supercritical extraction with industrial application.	07
Q.2	(a)	Write in detail about Reactive & Catalytic Distillation and explain manufacturing of MTBE in detail.	07
	(b)	What is the difference between molecular distillation and short path distillation? Write five industrial application of short path distillation. OR	07
	(b)	What is the principle of Short path distillation and discuss working of SPDU unit.	07
Q.3	(a) (b)	Write in detail about 4 step Pressure Swing Adsorption process. What is the difference between Melt Crystallization and Distillation? Discuss the industrial application of Melt Crystallization. OR	07 07
Q.3	(a) (b)	Describe the different techniques of Melt Crystallization Discuss principle of Pressure Swing Adsorption with one industrial application in detail.	07 07
Q.4	(a)	Discuss advantages and disadvantages of supercritical extraction over liquid- liquid extraction.	07
	(b)	Explain principles of Pervaporzation with example of production of absolute alcohol. OR	07
Q. 4	(a)	Discuss BALE and KATAMAX packing with neat figures of it.	07
ζ. '	(b)	Write in detail about Osmotic distillation and its various industrial applications.	07
Q.5	(a)	Compare Reverse Osmosis and Ultra filtration keeping operating pressure, membrane pores and types of application in mind?	07
	(b)	What is Azeotropic and Extractive Distillation? Discuss advantages and disadvantages of Pressure Swing Distillation over Azeotropic and Extractive	07

of material used to manufacture membranes? Write and discuss about Membrane Reactors.

Explain concept of Osmosis and Reverse Osmosis. What are the different types

distillation.

Q.5

(a)

(b)

07

07