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Date: 04/05/2015

Seat No.:	
No	

Subject Code: 170504

Subject Name: New Separation Techniques

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII • EXAMINATION - SUMMER • 2015

	me: (structi	02.30pm-05.00pm Total Marks: 7	70
	1 2	. Attempt all questions.	
Q.1	(a)	Describe different types of membrane modules with neat sketch used in membrane separation process.	07
	(b)	Discuss various separation techniques used in chemical industry and their advantages with example.	07
Q.2	(a)	Explain the benefits of melt crystallization over conventional crystallization from solution.	07
	(b)	Explain advantages and disadvantages of pressure swing distillation over extractive and azeotropic distillation.	07
		OR	
	(b)	Explain advantages and disadvantages of supercritical solvents over conventional liquid solvents.	07
Q.3	(a)	Explain the design and working of a short path distillation unit with a sketch.	07
	(b)	Explain ROSE process with detail flow sheet and write its advantages.	07
		OR	
Q.3	(a)	Explain the concept of reverse osmosis and various applications of reverse osmosis.	07
	(b)	Discuss about membrane reactors.	07
Q.4	(a)	Explain manufacturing of MTBE in detail.	07
	(b)	Explain four step pressure swing adsorption process in detail.	07
		OR	
Q.4	(a)	Discuss in details various operating parameters for the evaluation of performance of membrane process.	07
	(b)	Write short note on osmotic distillation.	07
Q.5	(a)	Explain concept and working of pressure swing distillation.	07
	(b)	Explain ultrafiltration with its industrial applications.	07
		OR	
Q.5	(a)	Write in details about reactive and catalytic distillation and discuss BALE and KATMAX packings with neat sketch.	07
	(b)	Explain the manufacturing of absolute alcohol by using pervaporation.	07
