Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. VIIth Semester–Examination – Nov- 2011

Subject code: 170504

Subject Name: New Separation Techniques

Date:26/11/2011 **Time: 10:30 am – 01:00 pm**

Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1		Explain with Flowsheet: Manufacturing process of Methyl Tertiary Butyl Ether (MTBE) via Conventional process and via Catalytic Distillation.	**14**
Q.2	**(a)**	Explain with neat flowsheet: Residuum Oil Supercritical Extraction (ROSE) process.	**07**
	(b)	Discuss about the advantages and disadvantages of ROSE process over conventional Propane Deasphalting process.	**07**
		OR	
	(b)	Advantage & Disadvantages of supercritical solvents over conventional liquid solvents.	**07**
Q.3	**(a)**	Explain working of Short Path Distillation unit.	**07**
	(b)	Explain: Manufacturing of monoglyceride and dimeric Fatty Acids.	**07**
		OR	
Q.3	**(a)**	Explain Concept and working of Pressure Swing Distillation.	**07**
	(b)	Advantages and Disadvantages of Pressure Swing Distillation over Azeotropic and Extractive distillation.	**07**
Q.4	**(a)**	Explain with neat flowsheet working of Six Bed Pressure Swing Adsorption used for recovery or purification of hydrogen from gas mixture.	**07**
	(b)	Discuss about the advantages and disadvantages of Pressure Swing Adsorption over Cryogenic Distillation.	**07**
		OR	
Q.4	**(a)**	Write about the different techniques used for crystallizations. List out the different techniques used for melt crysalization.	**07**
	(b)	Write short note on Osmotic Distillation.	**07**
Q.5	**(a)**	Explain the concept of Reverse Osmosis and Applications of Reverse Osmosis.	**07**
	(b)	Write short note on various modules used for membrane reactor.	**07**
		OR	
Q.5	**(a)**	Write short note on Ultra Filtration.	**07**
	(b)	Explain the manufacturing of absolute alcohol by using pervaporation unit.	**07**

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