Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII • EXAMINATION – SUMMER 2013

Subject Code: 180502 **Date: 13/05/2013**

Subject Name: Petroleum Refining and Petrochemicals

Time: 10:30 am TO 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	**(a)**	Discuss worldwide refining trends and challenges for Indian refining industry.	**07**
	(b)	Define: (i) Octane number (ii) Flash point (iii) Cetane number (iv) Spontaneous ignition temperature (v) Softening point (vi) Penetration index (vii) Pour point.	**07**
Q.2	**(a)**	Discuss about different tests and properties of kerosene in brief.	**07**
	(b)	Explain Merox sweetening process for gasoline treatment.	**07**
		OR	
	(b)	Describe different arrangement of distillation towers in petroleum fractioning with the help of neat sketches.	**07**
Q.3	**(a)**	Discuss about various catalysts used in catalytic cracking.	**07**
	(b)	Describe platforming in detail with a neat diagram.	**07**
		OR	
Q.3	**(a)**	List out various types of gases from petroleum. Explain any three in detail.	**07**
	(b)	Compare the performance of phenol and furfural solvents in extraction treatment of lubes.	**07**
Q.4	**(a)**	Describe manufacturing process of styrene with a neat flowsheet.	**07**
	(b)	With the help of a detailed flowsheet explain the manufacturing process of polypropylene.	**07**
		OR	
Q.4	**(a)**	Explain manufacturing process of acetic acid. List out the major engineering problems.	**07**
	(b)	Discuss about petrochemical feedstock in detail.	**07**
Q.5	**(a)**	Discuss about the current scenario of world petrochemical industry.	**07**
	(b)	Describe manufacturing process of poly vinyl chloride. List out the required raw materials and related chemical reaction.	**07**
		OR	
Q.5	**(a)**	Discuss major engineering problems involved in production of ethylene. Also list out various types of raw materials used.	**07**
	(b)	Describe manufacturing process of HDPE in detail along with its application.	**07**

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