

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2017

**Subject Code: 2180502**
**Date: 02/11/2017**
**Subject Name: Petroleum Refining & Petrochemicals**
**Time: 02:30 PM TO 05:00 PM**
**Total Marks: 70**
**Instructions:**

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

		MARKS
Q.1	(a) Define: (i) Octane number (ii) Cetane number (iii) Softening point	03
	(b) Write the definition and significance of following: Flash and Fire Point	04
	(c) Discuss about different tests and properties of kerosene in brief.	07
Q.2	(a) Compare the performances of phenol and furfural for the Solvent treatment of lubes. (Three points)	03
	(b) Define/explain the following terms in context with petroleum refining. (i) Sour crude (ii) API Gravity (iii) Viscosity index (iv) Aniline point	04
	(c) Write short notes on Dehydration and desalting of crudes.	07
	<b>OR</b>	
	(c) Describe different arrangement of distillation towers in petroleum fractioning with the help of neat sketches.	07
Q.3	(a) Discuss about ADU for the crude petroleum	03
	(b) What is cracking? Discuss the properties of cracked materials	04
	(c) Explain the Catalytic Reforming process in detail.	07
	<b>OR</b>	
Q.3	(a) List out various types of gases from petroleum.	03
	(b) Explain any three types of gases in detail.	04
	(c) Explain Merox sweetening process for gasoline treatment.	07
Q.4	(a) Discuss major engineering problems of Methanol.	03
	(b) Discuss properties and uses of Methanol.	04
	(c) Describe manufacture of vinyl acetate with neat flow sheet along with its uses.	07
	<b>OR</b>	
Q.4	(a) Discuss properties and uses of Ethyl glycol.	03
	(b) Discuss properties and uses of LDPE.	04
	(c) Discuss about the current scenario of world petrochemical industry.	07
Q.5	(a) Discuss properties and uses of Acetic acid.	03
	(b) Discuss major engineering problems in vinyl chloride manufacture.	04
	(c) Discuss manufacturing process of Styrene with neat flow diagram.	07

**OR**



Q.5	(a) List out various types of raw materials used in production of ethylene.	03
	(b) Discuss major engineering problems involved in production of ethylene.	04
	(c) Describe with a neat flow diagram manufacture of Ethylene Oxide.	07

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