

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) **07**  
Spontaneous ignition temperature (v) Softening point (vi)  
Penetration index (vii) Pour point.
- 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**

\*\*\*\*\*