

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII • EXAMINATION – SUMMER • 2015

Subject code: 180502

Date:11/05/2015

Subject Name: Petroleum Refining and Petrochemicals

Time: 10.30AM-01.00PM

Total Marks: 70

Instructions:

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

Q.1 (a) Discuss catalytic reforming process with respect to the following points only **07**

Objective (ii) feedstock (iii) catalyst used (iv) Major reactions

(b) Define and classify crude. Discuss composition of crude oil with reference to sulfur and nitrogen **07**

Q.2 (a) Write explanatory note on: (a) visbreaking (ii) delayed coking **07**

(b) Briefly describe mechanism behind catalytic cracking and catalyst used in it. **07**

OR

(b) Discuss different tests and properties of petroleum oil products. **07**

Q.3 (a) Write a short note on oil fields and refineries in India. **07**

(b) Compare atmospheric distillation and vacuum distillation for processing of petroleum. **07**

OR

Q.3 (a) Define/Explain the following terms in context with petroleum refining: (Any 7) **07**

(i) Viscosity index (ii) API gravity (iii) Pour point (iv) Softening point (v) Octane number (vi) Breathing loss (vii) Smoke point (viii) Flash point number (ix) Cetane number

(b) Write a note on propane deasphalting. **07**

Q.4 (a) Discuss the process of Lead doctoring of gasoline with reactions and PFD **07**

(b) Explain dehydration and desalting of crudes. Discuss electric desalting process in brief. **07**

OR

Q.4 (a) Write a note on manufacturing of vinyl acetate and its uses. **07**

(b) Discuss manufacturing process of methanol with its application. **07**

Q.5 (a) Describe manufacturing process of styrene butadiene rubber with neat process flow diagram and discuss major engineering problems involved in it. **07**

(b) Discuss manufacturing process of polypropylene with flow diagram. **07**

OR

Q.5 (a) Explain manufacturing process of High Density Polyethylene and its application. **07**

(b) Discuss manufacturing process of polyvinylchloride monomer and major engineering problems involved in it with neat diagram. **07**
