

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2180502****Date:15/05/2019****Subject Name:Petroroleum Refining & 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) Explain in brief occurrence of crude oil. **03**
  - (b) Explain crude assay analysis in brief. **04**
  - (c) Define the following terms:- **07**  
(1) flash point (2) fire point (3) Smoke point (4) Octane Number (5) Aniline point (6) Viscosity index (7) Pour point
- Q.2**
- (a) Write down the composition of crude oil. **03**
  - (b) Explain electric desalting of crude oil in brief. **04**
  - (c) Explain in detail different types of diesel and its test for characterization of different properties. **07**
- OR**
- (c) Explain various types of Naphtha their important properties and it's applications in detail. **07**
- Q.3**
- (a) State types of reflux in crude oil distillation column. **03**
  - (b) Explain lead doctoring method for treatment of gasoline in brief. **04**
  - (c) Explain Atmospheric Distillation Unit (ADU) with neat sketch. **07**
- OR**
- Q.3**
- (a) Define different types of average boiling point of crude oil. **03**
  - (b) Explain Merox sweetening method for gasoline treatment in brief. **04**
  - (c) What is dewaxing? Why it is required? Explain any one method for dewaxing of lubes. **07**
- Q.4**
- (a) Explain types of cracking in brief. **03**
  - (b) Explain catalytic reforming in brief. **04**
  - (c) Explain (FCC) fluidized catalytic cracking with neat sketch. **07**
- OR**
- Q.4**
- (a) Mention various petrochemicals obtained from Ethylene. **03**
  - (b) State various routes of production of Methanol. **04**
  - (c) Explain manufacturing process of formaldehyde from methanol with flow sheet. **07**
- Q.5**
- (a) Enlist major engineering problems associated with production of ethylene oxide. **03**
  - (b) Give different industrial applications of Isopropanol. **04**
  - (c) Describe manufacturing process of styrene with neat process flow diagram. **07**
- OR**
- Q.5**
- (a) Discuss industrial uses of polypropylene. **03**
  - (b) Explain properties of high Density Polyethylene and its applications. **04**
  - (c) Describe manufacturing process of LDPE with neat process flow diagram. **07**

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