

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**DIPLOMA ENGINEERING – SEMESTER – V- EXAMINATION – SUMMER 2016**

**Subject Code: 3350503****Date: 16/05/2016****Subject Name: PR & PT****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.
4. Each question carry equal marks (14 marks)

- Q.1** Answer any seven out of ten. **14**
1. Define:
    - (i) Petroleum (ii) petrochemicals
  2. Define: Flash point
  3. Define: Smoke point
  4. Give full name of: ADU, API
  5. What is sweetening?
  6. What is sweating?
  7. Define: cracking.
  8. Define: reforming.
  9. List out methods used for sulfur removal.
  10. Give full name of: CNG, LPG
- Q.2** (a) Write a short note on types of refineries. **03**
- OR
- (a) Give composition of petroleum. **03**
- (b) Draw a neat sketch of pipe still heater (any one) **03**
- OR
- (b) Why dehydration and desalting of crude is necessary? **03**
- (c) Give classification of petroleum by any two methods. **04**
- OR
- (c) Explain chemical changes taking place in the refinery processes. **04**
- (d) Draw a neat flow diagram of atmospheric distillation of crude. **04**
- OR
- (d) Give purpose of sulfur removal. **04**
- Q.3** (a) Give purpose of cracking. **03**
- OR
- (a) Discuss in brief about visbreaking. **03**
- (b) Draw a neat sketch of doctor's sweetening process. **03**
- OR
- (b) Write a short note on catalytic desulfurization. **03**
- (c) Discuss about the effect of temperature and pressure on cracking. **04**
- OR
- (c) Draw a neat flow diagram of reforming by platinum catalyst. **04**
- (d) Differentiate between phenol extraction process and furfural extraction process. (Any four points) **04**
- OR
- (d) Draw a neat flow diagram of MEK dewaxing process. **04**

- Q.4** (a) Write different reactions for manufacture of phenol by benzene sulfonate process. **03**
- OR
- (a) Write different raw materials and reaction for manufacture of vinyl chloride. **03**  
(b) Draw a neat flow diagram of manufacture of methanol. **04**
- OR
- (b) Discuss dewaxing without solvent. **04**  
(c) Discuss about development of petrochemical industry in Gujarat and India. **07**
- Q.5** (a) Write a short note on chemicals from aromatics. **04**  
(b) Draw a neat flow diagram of manufacture of propylene oxide. **04**  
(c) State any six refinery products. **03**  
(d) State different solvents used for solvent extraction process. **03**

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