

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – V • EXAMINATION – SUMMER- 2017

Subject Code: 3350503**Date: 6-05-2017****Subject Name: Petroleum Refining & Petrochemical Technology****Time: 2.30 PM to 5.00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

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| Q.1 | Answer any seven out of ten. | 14 |
| | 1. Define Petroleum and Petrochemicals. | |
| | 2. Write down full form of ADU & VDU. | |
| | 3. What is API gravity? | |
| | 4. What is ASTM distillation? | |
| | 5. Define smoke point with its significance. | |
| | 6. Define Flash & Fire point. | |
| | 7. Write the composition of CNG and LPG. | |
| | 8. Write the significance of aniline point. | |
| | 9. Give the full form of RIL & GNFC. | |
| | 10. What is carbon residue? | |
| Q.2 | (a) Short note on composition of petroleum. | 03 |
| | OR | |
| | (a) Explain refinery processes. | 03 |
| | (b) Classify petroleum in brief. | 03 |
| | OR | |
| | (b) Discuss the refinery products with their boiling temperature. | 03 |
| | (c) Explain growth of petroleum industry in Gujarat. | 04 |
| | OR | |
| | (c) Short note on atmospheric distillation unit. | 04 |
| | (d) Explain electric desalting of crude oil. | 04 |
| | OR | |
| | (d) Draw any two sketches of pipe still heaters. | 04 |
| Q.3 | (a) Differentiate: thermal cracking & catalytic cracking. | 03 |
| | OR | |
| | (a) Explain: MEK dewaxing process. | 03 |
| | (b) Define: Softening point, Cloud point and Pour Point. | 03 |
| | OR | |
| | (b) Effect of temperature and pressure on catalytic reforming. | 03 |
| | (c) Explain visbreaking operation. | 04 |
| | OR | |
| | (c) Draw only flow diagram of MEROX treatment method of sulphur removal. | 04 |
| | (d) Describe the sulphur removal by Doctor's sweetening method. | 04 |
| | OR | |
| | (d) Draw only flow diagram of manufacturing process of Formaldehyde. | 04 |

- Q.4 (a) Explain Duo sol (selecto) extraction process for lube oil. 03
OR
(a) Describe manufacturing of phenol by benzene sulfonate process. 03
(b) Explain: Fluidized bed catalytic cracking (FCC). 04
OR
(b) Draw only flow diagram of manufacturing of Linear Alkyl Benzene (LAB). 04
(c) Describe manufacturing process of Ethylene oxide with neat flow diagram. 07
- Q.5 (a) Explain: Platinum reforming process (Platforming). 04
(b) Explain manufacturing process step of propylene oxide. 04
(c) Explain delayed coking. 03
(d) Draw flow diagram of SO₂ solvent extraction method for treatment of kerosene. 03

-----*Best Wishes*-----