

GUJARAT TECHNOLOGICAL UNIVERSITY**Diploma Engineering - SEMESTER-V • Examination – WINTER • 2014****Subject Code: 3350503****Date: 02-12-2014****Subject Name: Petroleum Refining and Petrochemical Technology****Time: 10:30 am - 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.
4. English version is considered to be Authentic.

- Q.1** Answer any seven out of ten. **14**
1. Define: (a) Virgin Gasoline (b) sweet and sour crude
 2. List out petroleum product with temperature range.
 3. Classify petroleum crude accord to U.S bureau of Mines.
 4. Give the full form of (i) ASTM (ii) API
 5. Why the dehydration and desalting of crude is required?
 6. Difference between sweetening and sweating.
 7. List out various Dewaxing methods.
 8. Define cracking and reforming.
 9. Write about Effect of pressure and temperature on cracking.
 10. Why the VDU is employed after ADU during petroleum fractionation?
- Q.2** (a) Write about composition of petroleum. **03**
- OR
- (a) Different types of tower arrangement of distillation of crude. **03**
- (b) Define Doctoring and write the criteria for the doctoring. **03**
- OR
- (b) Define: RON, MON, Cetane No. **03**
- (c) List out the various methods of treatment for CNG and LNG **04**
- OR
- (c) Write a short note on Penetration Index test method for bitumen. **04**
- (d) Classify the Gas from petroleum in brief. **04**
- OR
- (d) Write the different types of refinery and refinery processes. **04**
- Q.3** (a) Write the properties of Gasoline and name of test methods for that. **03**
- OR
- (a) Give the name of different methods of dehydration of crude with operating parameters. **03**
- (b) Define petrochemical and list out various petrochemical product. **03**
- OR
- (b) Short note Visbreaking. **03**
- (c) Draw the neat flowsheet of Visbreaking **04**
- OR
- (c) List out various methods of dewaxing without solvent and explain any one. **04**
- (d) Draw the flowsheet of treatment of kerosene by liquid SO₂ extraction process. **04**
- OR
- (d) Differentiate between hydrotreating and hydrocracking. **04**
- Q.4** (a) Draw the flowsheet of Ethylene Oxide production. **03**
- OR
- (a) Draw the flow sheet of Merox treatment. **03**
- (b) Short note on Merox treatment **04**
- OR
- (b) Describe the manufacturing of Phenol by Benzene sulfonate process. **04**

	(c) Comparison between Phenol and Furfural extraction method of treatment of Lube.	07
Q.5	(a) Write about development of Petrochemical industries in Gujarat and India.	04
	(b) Describe the manufacturing process for vinyl chloride.	04
	(c) Explain Duo sol process.	03
	(d) Define: Smoke point, Fire point and Cloud point.	03
