

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VIII (NEW) EXAMINATION – WINTER 2020****Subject Code:2180502****Date:25/01/2021****Subject Name:Petroleum Refining & Petrochemicals****Time:02:00 PM TO 04:00 PM****Total Marks: 56****Instructions:**

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Discuss in brief about the organic theories for formation of crude oil.	03
	(b) What is the role of reformer unit in refinery? Which are the major reactions taking place in that unit?	04
	(c) Define: (1) Diesel Index (2) Flash point (3) Smoke point (4) Cetane Number (5) Penetration Index (6) Kinematic Viscosity (7) Cloud point	07
Q.2	(a) Brief about the dehydration and desalting of crude oil.	03
	(b) Write a brief note on the composition of crude oil.	04
	(c) With neat sketch, explain MEROX treatment in detail.	07
Q.3	(a) Discuss about different impurities present in crude oil. What is sweetening? List few methods for sweetening.	03
	(b) Compare Furfural and Phenol extraction treatments.	04
	(c) List major reactions of cracking and explain Fluidized Catalytic Cracking in detail.	07
Q.4	(a) Write a brief note on delayed coking.	03
	(b) What are additives? Explain various additives and its importance for gasoline.	04
	(c) Explain in detail about the reformer unit of the refinery.	07
Q.5	(a) List major tests for kerosene and brief any one.	03
	(b) Explain the parameters which affects the reforming.	04
	(c) State different methods for treatment of Lube oil. Discuss any one in detail.	07
Q.6	(a) Discuss properties and uses of Acetic acid.	03
	(b) Write a note on propane deasphalting.	04
	(c) With neat flow diagram, discuss manufacturing process of Styrene.	07
Q.7	(a) Discuss in brief about the petrochemicals which are obtained from propylene.	03
	(b) Discuss major engineering problems associated with manufacturing process of ethylene oxide.	04

- (c) Explain manufacturing process of formaldehyde from methanol with flow sheet. **07**

- Q.8** (a) Discuss industrial uses of Vinyl Chloride. **03**
(b) Write uses and major properties of High Density Polyethylene and Low Density Polyethylene. **04**
(c) Describe manufacturing process of styrene butadiene rubber with neat flow diagram and discuss major engineering problems associated with it. **07**

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