Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) - EXAMINATION - SUMMER 2017

Subject Code: 2180502 Date: 29/04/2017

Subject Name: Petrolium 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)	Discuss various sulfur and nitrogen compounds present in crude oil stating their adverse effects.	07
		(b)	State and explain evidences in favor of biogenic origin of crude oil.	07
	Q.2	(a)	Define /explain following terms in context with petroleum refining (i) API gravity (ii) Aniline point (iii) smoke point (iv) octane number (ii) (v) cetane number (vi) K factor (vii) viscosity index	07
		(b)	State the purpose of desalting and dehydration of crude oil. Discuss any one method of desalting of crude oil.	07
			OR	
		(b)	Discuss lead doctoring of gasoline with a flow diagram	07
	(a)	Differentiate Catalytic and thermal cracking in terms of followings: (i) mechanism (ii) feed stocks (iii) operating conditions (iv) end products and (v) effects of operating variables.	07	
	(b)	Compare the performances of phenol and furfural as solvents for dewaxing. OR	07	
	Q.3	(a)	Discuss importance and process of vis-breaking.	07
(b		(b)	In context with catalytic reforming discuss the following: (i) Feed stocks (ii) reactions (iii) catalyst (iv) reaction conditions and (ii) (v) end products	07
	(a)	Starting from methane discuss the production process of methanol. state its industrial applications.	07	
	(b)	Discuss the manufacturing process of vinyl acetate monomer with a flow diagram.	07	
			OR	
Q.4 (a) (b)	(a)	Compare LDPE and HDPE along with their uses. Discuss manufacturing process of LDPE with the flow diagram.	07	
	(b)	What is coking and types of coking? Discuss soaker drum coking process with flow diagram and mention its merits and demerits.	07	
Q.5	(a)	Discuss manufacturing process of ethylene oxide. State uses of ethylene oxide.	07	
	(b)	State the principle and reaction for the manufacturing of styrene and styrene	07	
	. ,	butadiene rubber (SBR). State the uses of SBR OR		
	Q.5	(a)	Discuss the manufacturing process of Vinyl chloride and state its industrial uses.	07
(1	(b)	Discuss schematically the range of petrochemicals produced from C_1 , C_2 hydrocarbon and benzene.	07	
