GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) - EXAMINATION - SUMMER 2017					
Subject Code: 2143505 Date:					
Subject Name: Chemical Process Technology					
Time: 10:30 AM to 01:00 PM Total Mar					
Instru					
		Attempt all questions.			
		Make suitable assumptions wherever necessary. Figures to the right indicate full marks.			
Q.1		Answer the following (1 mark each)	14		
	1	Draw the structure of Terephthalic acid.			
	2	Write down reactions involved in manufacturing of urea.			
	3	What is alcohol concentration in beer?			
	4	What is biuret?			
	5 6	Discuss catalyst deactivation. Write down different processes available for nitric acid production.			
	7	Write down different raw material used for manufacturing of			
		Ethylene.			
	8	What is a synthesis gas?			
	9	Which catalyst is used during manufacturing of ammonia?			
	10	What is a role of sulfuric acid in manufacturing of nitro benzene?			
	11	What is the meaning of 10 % oleum?			
	12	Write down overall reaction involved in manufacturing of soda ash using Solvay process.			
	13 14	Octane number of a fuel is 55. What does it mean? What is fermentation?			
Q.2	(a)	Discuss manufacturing of wine.	03		
	(b)	Draw a neat flow sheet to manufacture ethylene.	04		
	(c)	Elaborate the fermentation process for manufacturing of citric acid?	07		
		OR			
	(c)	Explain manufacturing process of phenol from cumene with help of neat flow sheet.	07		
Q.3	(a)	Give the composition of crude oil.	03		
.	(b)	Draw a neat flow sheet to manufacture industrial alcohol.	04		
	(c)	What are the crude oil characteristics? Discuss any three in detail.	07		

OR
Q.3 (a) Define the following terms: (1)Pour Point (2) Octane number (3)

(b) Discuss reactions involved in manufacturing of synthesis gas from natural gas.
(c) Discuss manufacturing of ethylene with the help of neat flow diagram.

Petrochemicals

03

Q.4	(a) (b)	Desulphurization	03
	(c)		07
		OR	
Q.4	(a)	Discuss ion exchange process for water conditioning.	03
	(b)	Explain the major engineering problems involved in manufacturing process of Methanol.	04
	(c)	Explain the process to manufacture butyraldehyde through hydroformylation route.	07
Q.5	(a)	5 6 61	03
	(b) (c)	Describe the wet process for phosphoric acid manufacturing. What is oleum? Describe in detail the contact process for manufacturing sulfuric acid.	04 07
		OR	
Q.5	(a)	Write down applications of ammonia.	03
	(b)	Discuss major engineering problems associated with manufacturing of sulfuric acid.	04
	(c)	Explain the manufacturing process of Ammonia with a process flow diagram.	07
