

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2018****Subject Code:2143505****Date:10/12/2018****Subject Name:Chemical Process Technology****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Give the composition of crude oil.	03
	(b) State different applications of synthesis gas.	04
	(c) What are the crude oil characteristics? Discuss any three in detail.	07
Q.2	(a) Discuss demineralization process for water conditioning.	03
	(b) Explain manufacturing process of caustic soda using diaphragm cell with help of neat flow sheet.	04
	(c) Explain manufacturing process of Aniline from benzene with help of neat flow	07
	OR	
	(c) Explain the Lime soda process in detail.	07
Q.3	(a) Discuss methods used for manufacturing of hydrogen.	03
	(b) Discuss manufacturing of caustic soda with help of mercury cell	04
	(c) Discuss manufacturing of vinyl chloride with the help of neat flow diagram	07
	OR	
Q.3	(a) What is Dowtherm?	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
Q.4	(a) Mention major engineering problems and uses of urea	03
	(b) Explain the major engineering problems involved in manufacturing process of Methanol.	04
	(c) What is oleum? Describe in detail the contact process for manufacturing sulfuric acid.	07
	OR	
Q.4	(a) Discuss different types of alcoholic beverages	03
	(b) Draw a neat flow sheet to manufacture ethylene	04
	(c) Explain manufacturing process of ethylene oxide with neat flow diagram	07
Q.5	(a) Define the following terms: (1) Pour Point (2) Octane number (3) Petrochemicals	03
	(b) Write down applications of soda ash.	04
	(c) Explain the manufacturing process for Nitric acid?	07
	OR	
Q.5	(a) Discuss ion exchange process for water conditioning.	03
	(b) What is fermentation? Discuss types of fermentation with examples	04
	(c) Explain manufacturing process of soda ash with neat flow diagram	07
