Seat No.:	Enrolment No.

Subject Code:2131304

Time:10:30 AM to 01:00 PM

Subject Name: Chemical Engineering Processes

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III(New) EXAMINATION - SUMMER 2016

Date:04/06/2016

Total Marks: 70

Instr	uctio	as:	
	1.	Attempt all questions.	
	2.	Make suitable assumptions wherever necessary.	
	3.	Figures to the right indicate full marks.	
			MARKS
Q.1		Short Questions	14
	1	List some examples of unit processes.	
	2	List the major products from esterification process.	
	3	What are the different ways of manufacturing Sulfuric Acid?	
	4	Write the main reaction of urea synthesis	
	5	List different types of crushers and grinders.	
	6	Name of two important products produced by hydrolysis route.	
	7	Write the reaction for manufacture of Aniline.	
	8	What is biuret?	
	9	Name the catalyst used for manufacture of H ₂ SO ₄ .	
	10	Write the raw materials required for manufacture of Cellulose Acetate.	
	11	What are the different routes of producing ethanol?	
	12	Name some petrochemicals derived from ethylene route.	
	13	Write the reaction for manufacture of Methanol.	
	14	Write the reaction for manufacture of mono chloro acetic acid.	
Q.2	(a)	List the different unit operations.	03
	(b)	Explain the different ways of air pollution control in chemical	04
		manufacturing process.	
	(c)	Explain the manufacturing process of Ethanol from ethylene by	07
		sulphonation with a neat flow sheet.	
		OR	
	(c)	Describe the manufacturing process of Urea with the help of a flowsheet.	07
Q.3	(a)	Write the properties of acetic acid and its uses.	03
	(b)	What are the problems associated with urea manufacture?	04
	(c)	Describe the manufacturing process of Nitric acid with the help of a	07
	` ′	flowsheet.	
		OR	
Q.3	(a)	What are the various uses of ethanol?	03
	(b)	Write short note on hydrogenation of oils.	04
	(c)	Describe the manufacturing process of Acetic acid by oxidation process with a flowsheet.	07
Q.4	(a)	List the raw materials and chemical reaction of Ethylene Chloro hydrin manufacture.	03
	(b)	Discuss the health hazards related to Hydrogen Cyanide production.	04
	(c)	Describe the manufacturing process of Phenol with a neat flowsheet.	07

OR

Q.4	(a)	What are the various ways of bagasse disposal?	03
	(b)	Write short note on sulphur production.	04
	(c)	Explain the manufacturing process of Furfural by hydrolysis process.	07
Q.5	(a)	Write the properties of ammonia and its uses.	03
	(b)	Discuss the pollution aspects of alcohol industry.	04
	(c)	Explain in detail the manufacturing process of Vinyl chloride. Discuss the sources of pollution related to the process.	07
		OR	
Q.5	(a)	List the various application of Vinyl Chloride.	03
	(b)	Write short note on different types of conveyors.	04
	(c)	Explain in detail the manufacturing process of Vinyl Acetate. Discuss the major engineering problems.	07
