Seat 1	No.:	Enrolment No	
	GUJARAT TECHNOLOGICAL UNIVERSITY		
		BE - SEMESTER-III • EXAMINATION – WINTER • 2014	
Subj	ject Co	ode: 130505 Date: 20-12-2014	
Subj	ect Na	ame: Chemical Process Industries-1	
Time: 02.30 pm - 05.00 pm Total Marks: 70			
Instru	ictions:		
	2. M	ttempt all questions. Iake suitable assumptions wherever necessary. igures to the right indicate full marks.	
Q.1	(a)	Differentiate between batch Vs continuous process and unit operation Vs unit processes with example.	07
	(b)	Discuss sodium cation exchange process for water conditioning with reactions.	07
Q.2	(a)	Describe Frasch process for elemental sulfur mining with neat flow diagram	07
	(b)	Discuss with process flow diagram production of ammonia and major engineering problems involved in it.	07
		OR	
	(b)	Write short note on NPK fertilizer and its application.	07
Q.3	(a)	Discuss principle of membrane cell process with a diagram, chemical reactions	07
		and advantages over other conventional processes.	
	(b)	Discuss modified Solvay process for manufacturing of sodium carbonate.	07
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Q.3	(a)	List out various methods for production of Hydrogen. Discuss any one in details.	07
0.4	(b)	Explain Furnace process for manufacturing of Carbon-black with neat flow sheet.	07
Q.4	(a)	Discuss major engineering problems involved in production in sulfuric acid by contact process.	07
	(b)	Discuss Wet process for the production of phosphoric acid. Give comparison of wet process and electric furnace process.	07
		OR	
Q.4	(a)	Give Comparison between sulfate pulp and sulfite process in chemical pulping process.	07
	(b)	Discuss process of paper making from pulp with flow diagram and also discuss	07
		bleaching of pulp.	
Q.5	(a)	Discuss commercial classification of glasses in detail.	07
	(b)	Explain the manufacturing process of Portland cement with a neat flow sheet	07
		OR	
Q.5	(a)	Write short note on :i) Deareation of boiler feed water ii) Concentration of nitric acid	07
	(b)	Write short notes on: i) type of explosives and ii) rare gases of atmosphere	07
