

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-III (New) EXAMINATION – WINTER 2015**

**Subject Code:2130505****Date:21/12/2015****Subject Name: CHEMICAL PROCESS INDUSTRIES - I****Time: 2:30pm to 5:00pm****Total Marks: 70****Instructions:**

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

		<b>MARKS</b>
<b>Q.1</b>	<b>Short Questions</b>	<b>14</b>
	1 What do you mean by 65 % Oleum ?	
	2 Draw a schematic symbol of distillation operation.	
	3 Differentiate: Distilled and Mineral water.	
	4 What is biuret in Urea?	
	5 Explain concept of Reverse Osmosis.	
	6 List out four Cement manufacturing unit.	
	7 Write the formula of Soda ash and Caustic soda.	
	8 Define pulp.	
	9 Which are types of hardness?	
	10 What is desalination?	
	11 Define paper.	
	12 Give chemical formula of urea.	
	13 Name any two explosives.	
	14 List uses of natural graphite.	
<b>Q.2</b>	(a) Enlist the methods for the commercial production of Carbon Dioxide	<b>03</b>
	(b) Discuss scope of Chemical Industries in India.	<b>04</b>
	(c) Discuss advantage & disadvantage of membrane process.	<b>07</b>
	<b>OR</b>	
	(c) Explain ion-exchange process with neat diagram for water softening.	<b>07</b>
<b>Q.3</b>	(a) What are the uses of activated Carbon?	<b>03</b>
	(b) Explain Specialty papers. Specialty papers.	<b>04</b>
	(c) Explain manufacturing of paper with neat flow sheet.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Enlist methods of manufacturing glass and explain any one in detail.	<b>03</b>
	(b) Explain major engineering problems of Portland cement manufacturing process.	<b>04</b>
	(c) Write a short note on Solvay process for the production of Soda ash.	<b>07</b>
<b>Q.4</b>	(a) Explain in brief: Safety glass.	<b>03</b>
	(b) Write short note: Industrial Diamonds.	<b>04</b>
	(c) Explain manufacturing of Caustic and Chlorine with flow diagram.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Differentiate between mixed fertiliser and complex fertilizer.	<b>03</b>

- (b) Discuss major engineering problems associated with the production of Nitric acid **04**
- (c) Explain the manufacturing process of Urea with flow diagram. **07**
- Q.5** (a) Major engineering problems for contact process of sulfuric acid. **03**
- (b) Why Sulfur trioxide dissolved in conc.H<sub>2</sub>SO<sub>4</sub> and not in water? **04**
- (c) Explain DCDA process for sulphuric acid manufacturing with neat flow sheet. **07**
- OR**
- Q.5** (a) Enlist the special application of Photography and explain any one in brief. **03**
- (b) Write a short note: Explosive characteristics. **04**
- (c) Explain Furnace process for manufacturing of Carbon-black with neat flow sheet. **07**

\*\*\*\*\*