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Total number of pages:[2]

**B.Tech. || CHE || 3<sup>rd</sup> Sem**  
**CHEMICAL PROCESS INDUSTRIES**  
**Subject Code: BTCH-305A**

May 2018

2015 Batch onwards

Reappear

Paper ID :

Max Marks: 60

**Important Instructions:**

- All questions are compulsory
- Assume any missing data

**PART A (10x 2marks)**

Q. 1. Short-Answer Questions:

- What is meant by hydrogenation in oil and fat industry?
- What are the major oil seeds used for extraction of oil in India?
- Differentiate between soaps and detergents.
- How does green liquor differ from black liquor?
- Give the composition and uses of Borosilicate glass?
- Mention the steps involved in the manufacture of sugar.
- What are the corrosion problems associated with chlor alkali industry?
- Mention the uses of Phosphoric Acid and Nitric Acid?
- Define cement. From where did the name Portland Cement originate.
- How can the mercury pollution be controlled in chlor-alkali industry?

**PART B (5x8marks)**

Q. 2. Discuss the status of paper industry in India? With the help of flowsheet explain the Kraft pulping process? How can the chemicals be recovered from the process?

OR

What is the scope and status of Oil and Fats industry in India? Describe the solvent extraction process for extraction of oil and enlist the various factors affecting the rate of extraction?

CO<sub>1</sub>

Q. 3. Differentiate between diaphragm cell and mercury cell used in chlor-alkali industry. Explain the electrolytic process for chlorine-caustic soda production?

CO<sub>2</sub>

OR



Discuss DCDA process for synthesis of Sulphuric Acid. Also give the industrial applications of the Sulphuric Acid.

CO<sub>2</sub>

- Q. 4. What are the raw materials required for the production of urea? Explain the manufacturing process of Urea by ammonium carbamate decomposition process. How can the corrosion problems be handled in fertilizer industry?

CO<sub>3</sub>

OR

What are the various chemical reactions involved in the manufacture of Portland cement. With a flowsheet explain the method of its production? Also mention the various engineering problems involved during production?

CO<sub>3</sub>

- Q. 5. What are the latest trends and current issues related to Sugar industry in India? Discuss the process of cane sugar refining? Also mention the uses of bagasse?

CO<sub>4</sub>

OR

Define saponification? Explain the continuous process for manufacturing soap and glycerin? State the environmental considerations related to this industry?

CO<sub>4</sub>

- Q. 6. Describe the manufacturing process of linear alkyl benzene (LAB) based detergent? What are its advantages over other raw materials?

CO<sub>5</sub>

OR

Define Glass? Mention any three important types of glass and their uses? Also describe the glass manufacturing process with schematic diagram?

CO<sub>5</sub>