

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III • EXAMINATION – WINTER • 2014

Subject Code: 2131304

Date: 23-12-2014

Subject Name: Chemical Engineering Processes

Time: 02.30 pm - 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.

- Q.1** (a) Describe the manufacturing process of Urea with the help of a flowsheet. **07**
(b) Explain in detail the manufacturing process of Vinyl chloride. Discuss the sources of pollution related to the process. **07**

- Q.2** (a) Explain manufacturing process of Aniline with a flowsheet. What are the hazards related to the process? **07**
(b) Describe manufacture of nitric acid and engineering problem associated with the process. **07**

OR

- (b) Explain the importance of pollution control in chemical manufacturing process. **07**
- Q.3** (a) Describe the manufacturing process of Ethanol from ethylene by sulphonation. Discuss the uses of ethanol and pollution aspects related to the process. **08**
(b) Discuss the health and safety related hazards in Hydrogen cyanide production. **06**

OR

- Q.3** (a) Write short note on:
(i) uses of monochloro acetic acid
(ii) biuret formation problem in urea production. **08**
(b) Write short note on hydrogenation of oils. **06**

- Q.4** (a) Write manufacturing process of Ethylene Chlorohydrin. List the related health and safety aspects. **08**
(b) Write short note on sulfur production. **06**

OR

- Q.4** (a) Explain the manufacturing process of Furfural by hydrolysis process. Highlight the pollution aspects. **07**
(b) With a flowsheet describe manufacture of Ethyl acetate. List the major engineering problems. **07**

- Q.5** (a) Describe the manufacturing process of Acetic acid. List the major engineering problems. **07**
(b) Explain the manufacturing process of Cellulose acetate with a flowsheet. **07**

OR

- Q.5** (a) Describe the manufacturing process of Phenol. Highlight the pollution problems. **07**
(b) Explain the manufacturing process of methanol with a neat flowsheet. **07**
