

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – SUMMER • 2014****Subject Code: 141303****Date: 23-06-2014****Subject Name: Chemical Engineering Processes****Time: 10:30 am - 01:00 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 the manufacturing process of aniline from nitrobenzene. Discuss the health risks involved in the process. **07**

- Q.2** (a) Explain in detail the manufacturing process of Sulphuric acid by Contact process. Write about the pollution aspects of the process. **07**
(b) Describe the manufacturing process of Vinyl Acetate. What are the uses of vinyl acetate? **07**

OR

- (b) Describe the manufacturing process of Ethyl Acetate. Discuss the hazards related to the process. **07**

- Q.3** (a) Explain the manufacturing process of Furfural. Discuss the pollution aspects related to the process. **08**
(b) Explain the working of a distillation column. **06**

OR

- Q.3** (a) (i) What is biuret formation? List other engineering problem associated with urea manufacture. **08**
(ii) List the different types of crushers and grinders used in industry.
(b) Write short note on: **06**
(i) heat exchangers (ii) industrial driers.

- Q.4** (a) Describe in brief the manufacturing process of Methanol. **06**
(b) Write short note on the following unit operation: **08**
(i) adsorption (ii) filtration

OR

- Q.4** (a) Explain the manufacturing process of Monochloro Acetic Acid. List the possible uses. **07**
(b) Write manufacturing process of Ethanol by hydrolysis. List the related safety aspects. **07**

- Q.5** (a) Briefly explain the sources of pollution in Vinyl Chloride manufacture. **06**
(b) Write in brief about: **08**
(i) cyclone separator (ii) bucket elevators

OR

- Q.5** (a) Describe the manufacturing process of Acetic Acid. List the related environmental aspects. **07**
(b) Explain manufacturing process of Hydrogen Cyanide with a flowsheet. What are the hazards related to the process? **07**
