

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV • EXAMINATION – WINTER 2013

Subject Code: 141303

Date: 26-12-2013

Subject Name: Chemical Engineering Processes

Time: 02:30 pm to 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) Explain in detail the manufacturing process of Sulphuric acid by Contact process with a neat flowsheet. **08**
(b) Write short note on following unit operations: **06**
i) Leaching process ii) Drying process

- Q.2** (a) Explain manufacturing process of Urea in detail with a flowsheet. **07**
(b) Explain the manufacturing process of aniline. Discuss hazardous health aspects related to aniline. **07**

OR

- (b) Explain the manufacturing process of nitric acid. List major safety hazards. **07**

- Q.3** (a) Describe the manufacturing process of Acetic acid. Also discuss the major engineering problems. **07**
(b) Discuss the different crushers and grinders used in industry for size reduction. **07**

OR

- Q.3** (a) Explain manufacturing process of Methanol. **06**
(b) Write short note on: **08**
(i) Froth floatation (ii) Shell and Tube heat exchanger.

- Q.4** (a) List the major engineering problems in the manufacture of urea. Suggest methods to minimize biuret production and various possible uses of biuret. **07**
(b) Discuss various methods of conveying of solids. **07**

OR

- Q.4** (a) Describe manufacturing process of acetic acid by oxidation. **06**
(b) Write a short note on: **08**
(i) cyclone separator. (ii) electrostatic precipitator

- Q.5** (a) With a neat flowsheet describe the manufacture of Vinyl Chloride. **07**
(b) Explain hydrogenation of cotton seed oil with a flowsheet. **07**

OR

- Q.5** (a) Describe the manufacturing process of Vinyl Acetate. What are the uses of vinyl acetate? **07**
(b) Describe tray column and packed column used in distillation operation. **07**
