

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 141303****Date: 29/05/2012****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) Explain in details the manufacturing process of Nitric acid with a neat flow sheet. **08**
- (b) Write short note on following unit operations: **06**
- i) Extraction process ii) Distillation process
- Q.2** (a) Write manufacturing process of Ethanol from ethylene with flow diagram and explain source of pollution. **07**
- (b) Explain the manufacturing process of aniline. Discuss hazardous health aspects related to aniline. **07**
- OR**
- (b) Explain the various operations for transportation of solids. **07**
- Q.3** (a) Explain the manufacturing of Sulphuric acid by DCDA or Contact process. List the major pollution aspects. **08**
- (b) Discuss the various solid separation techniques with neat sketch. **06**
- OR**
- Q.3** (a) With a neat flowsheet explain the manufacturing process of Vinyl chloride. Also discuss the major engineering problems. **10**
- (b) Write a note on crushing and grinding operations. **04**
- Q.4** (a) With the help of a flowsheet explain the manufacturing process of Urea. Also discuss the major engineering problems. List the uses of urea. **10**
- (b) Write short note on cyclone separator. **04**
- OR**
- Q.4** (a) Discuss manufacturing process of acetic acid by oxidation. Discuss the pollution and safety concerns in this process. **10**
- (b) Write a short note on membrane processes. **04**
- Q.5** (a) Describe the manufacture of Cellulose Acetate. **07**
- (b) Explain manufacturing process of Hydrogen Cyanide. Discuss the toxicity and health hazards related to HCN. **07**
- OR**
- Q.5** (a) Describe the manufacture of Vinyl Acetate. **07**
- (b) Explain manufacturing process of Furfural by hydrolysis process. Also list the uses. **07**
