

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (New) EXAMINATION – WINTER 2018****Subject Code: 2130505****Date: 28/11/2018****Subject Name: Chemical Process Industries-1****Time: 10:30 AM TO 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) List three heat exchange equipment's and draw schematic diagram. **03**
(b) Define unit operation and unit process. **04**
(c) Write short note on special glasses. **07**
- Q.2** (a) Discuss advantages and disadvantages of Vanadium pentoxide catalyst. **03**
(b) Write short note on diaphragm cells. **04**
(c) Explain Sulphuric acid manufacture with a neat flow diagram. **07**
- OR**
- (c) Compare wet process and electric process in phosphoric acid manufacture. **07**
- Q.3** (a) Explain biuret formation. **03**
(b) Compare detonating and deflagrating explosives. **04**
(c) Discuss major engineering problems in Sulphuric acid manufacture. **07**
- OR**
- Q.3** (a) What are NPK fertilizers? **03**
(b) Write short note on Industrial explosives. **04**
(c) Discuss major engineering problems in Urea manufacture from Ammonium carbamate. **07**
- Q.4** (a) Explain reverse osmosis. **03**
(b) Write short note on special cements. **04**
(c) Explain Portland cement manufacture with a neat flow diagram. **07**
- OR**
- Q.4** (a) Explain electro dialysis. **03**
(b) Write short note on Industrial diamonds. **04**
(c) Write short note on setting and hardening of cement. **07**
- Q.5** (a) List three methods of pulp production. **03**
(b) Write short note on rare gases of atmosphere. **04**
(c) Explain Kraft pulping process with a neat flow diagram. **07**
- OR**
- Q.5** (a) List types of paper products. **03**
(b) List various sources of CO₂ for commercial production. **04**
(c) Explain paper making process with a neat flow diagram. **07**
