

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- IV (Old) EXAMINATION – WINTER 2019****Subject Code: 141303****Date: 17/12/2019****Subject Name: Chemical Engineering Processes****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) Discuss the hydrogenation of cotton seed oil using a neat process flow diagram **07**
(b) Explain the sources of pollution, health & safety in the production of hydrogen cyanide **07**
- Q.2** (a) Draw only a neat process flow diagram of manufacturing of Urea. Enlist nonfertiliser uses of Urea. **07**
(b) Discuss the sources of pollution, health & safety in the production of nitric acid **07**
- OR**
- (b) Explain the major engineering problems involved in the production of hydrogenated vegetable oil **07**
- Q.3** (a) Draw only a neat flow diagram of Furfural production **07**
(b) Write down all the major equations involved in the production of nitric acid **07**
- OR**
- Q.3** (a) Write down all the major equations involved in the production of Phenol. Give details for the routes through which phenol can be produced. **07**
(b) Discuss any two routes through which ethanol can be produced **07**
- Q.4** (a) Discuss the methods for the production of vinyl chloride monomer. And explain any one in detail. **07**
(b) Explain with the flow diagram production of acetic acid **07**
- OR**
- Q.4** (a) Enlist the major engineering problems involved in the production of methanol. And explain any two in detail. **07**
(b) Discuss in brief various process alternatives for the manufacturing of Urea **07**
- Q.5** (a) Draw only a neat flow diagram of monochloroacetic acid **07**
(b) Discuss in details used of the following: Methanol and Phenol **07**
- OR**
- Q.5** (a) Explain the process flow diagram of Vinyl acetate **07**
(b) Draw only a neat process flow diagram of Ethylene chloro hydrin **07**
