

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2131304****Date: 11/06/2019****Subject Name: Chemical Engg 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.

**MARKS**

- Q.1** (a) Why an environmental engineer needs to teach the subject Chemical Engineering Processes? **03**
- (b) What is Material Safety & Data Sheet? Name the sections of MSDS. **04**
- (c) With the help of a flow sheet, explain the manufacturing process of Urea. **07**
- Q.2** (a) Discuss the health and safety aspects involved with Acetic Acid manufacturing. **03**
- (b) Write down Properties, uses and Chemical Equation for manufacturing process of the Nitric Acid. **04**
- (c) Discuss about following Unit operation: (i) Distillation **07**  
(ii) Extraction (iii) Heat Exchanger
- OR**
- (c) Discuss about following Unit Processes: (i) Hydrogenation (ii) Halogenation (iii) Oxidation **07**
- Q.3** (a) Discuss the health and safety aspects involved with Ethylene Chloro-Hydrin manufacturing. **03**
- (b) Write down Properties, uses and Chemical Equation for manufacturing process of the Aniline. **04**
- (c) With the help of a flow sheet, explain the manufacturing process of Ethanol by sulphonation. **07**
- OR**
- Q.3** (a) Discuss the health and safety aspects involved with Hydrogen Cyanide manufacturing. **03**
- (b) Write down Properties, uses and Chemical Equation for manufacturing process of the Acetic Acid. **04**
- (c) With the help of a flow sheet, explain the manufacturing process of Cellulose Acetate. **07**
- Q.4** (a) Explain the sources of pollution related to the manufacturing process of Acetic Acid. **03**
- (b) Write down Properties, uses and Chemical Equation for manufacturing process of the Hydrogen Cyanide. **04**
- (c) With the help of a flow sheet, explain the manufacturing process of Vinyl Chloride. **07**
- OR**
- Q.4** (a) Discuss the health and safety aspects involved with Mono-Chloro-Acetic Acid manufacturing. **03**
- (b) Write down Properties, uses and Chemical Equation for manufacturing process of the Phenol. **04**
- (c) With the help of a flow sheet, explain the manufacturing process of Ethanol by Hydrolysis. **07**

- Q.5 (a) Explain the sources of pollution related to the manufacturing process of Nitric Acid. **03**
- (b) Explain the process of Hydrogenation of Cotton seed oil. **04**
- (c) With the help of a flow sheet, explain the manufacturing process of Ethylene Chloro-Hydrin. **07**

**OR**

- Q.5 (a) Discuss the health and safety aspects involved with Methanol manufacturing. **03**
- (b) Discuss the health and safety aspects involved with Ethyl Acetate manufacturing. **04**
- (c) With the help of a flow sheet, explain the manufacturing process of Vinyl Acetate. **07**

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