

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV(New) EXAMINATION – SUMMER 2016

Subject Code:2143505**Date:06/06/2016****Subject Name:Chemical Process Technology****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 Answer the following (1 mark each) 14**
- 1 Write down reactions involved in manufacturing of urea.
 - 2 Write down different processes available for nitric acid production.
 - 3 Write down different processes available for phosphoric acid production.
 - 4 Note down the reaction involved in manufacturing of industrial alcohol using malt fermentation.
 - 5 Define sterilization.
 - 6 Describe types of wine.
 - 7 Explain steps for regeneration of ion exchange resins.
 - 8 Explain classification of crude oil based on sulfur content.
 - 9 What is a role of sulfuric acid in manufacturing of nitro benzene?
 - 10 Describe the function of coal gasifier in manufacturing Ammonia.
 - 11 Write down reactions involved in manufacturing of ethylene glycol.
 - 12 What is fermentation?
 - 13 Discuss catalyst deactivation.
 - 14 Which are the types of natural gas?
- Q.2 (a) Discuss different types of alcoholic beverages. 03**
(b) Draw a neat flow sheet to manufacture ethylene. 04
(c) Explain manufacturing process of phenol from cumene with help of neat flow sheet. 07
- OR**
- (c) Explain manufacturing process of ethylene oxide with neat flow diagram. 07**
- Q.3 (a) What is Dowtherm? 03**
(b) Draw a neat flow sheet to manufacture industrial alcohol. 04
(c) Write a short note on crude distillation with neat diagram. 07
- OR**
- Q.3 (a) Define the following terms: (1)Pour Point (2) Octane number (3) Petrochemicals 03**
(b) Draw a neat flow sheet to manufacture vinyl chloride. 04
(c) Discuss Characterization properties of crude oil. 07
- Q.4 (a) Discuss demineralization process for water conditioning. 03**
(b) Explain manufacturing process of caustic soda using diaphragm cell with help of neat flow sheet. 04
(c) Explain manufacturing process of Aniline from benzene with help of neat flow 07

sheet.

OR

- Q.4** (a) Discuss ion exchange process for water conditioning. **03**
- (b) Explain the major engineering problems involved in manufacturing process of Methanol. **04**
- (c) Explain the process to manufacture butyraldehyde through hydroformylation route. **07**
- Q.5** (a) Discuss the steps involved in manufacturing of wine. **03**
- (b) Discuss manufacturing process of beer with help of neat flow sheet. **04**
- (c) Explain the manufacturing process of Ammonia with a process flow diagram. **07**

OR

- Q.5** (a) Mention major engineering problems and uses of urea. **03**
- (b) Discuss manufacturing of Absolute alcohol using azeotropic distillation process. **04**
- (c) Explain manufacturing process of sulphuric acid with help of neat flow sheet. **07**
