

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII • EXAMINATION – WINTER • 2014

Subject Code: 173501

Date: 25-11-2014

Subject Name: Chemical Process Technology

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) Write and explain Kellogg ammonia process with neat process flow diagram **07**  
(b) Mention processes to manufacture nitric acid. Explain any one in detail with neat diagram. **07**
- Q.2** (a) Write a short note on manufacture of vinyl chloride from ethylene dichloride. **07**  
(b) 1. Write down the engineering aspects of phosphoric acid manufacturing process in detail. **04**  
2. Write down uses of the same. **03**
- OR**
- (b) Write a short note on petroleum crude characteristics. **07**
- Q.3** (a) Explain the process to manufacture butyraldehyde through hydroformylation route. **07**  
(b) Write and explain the process to manufacture ethylene glycol with neat flow diagram. **07**
- OR**
- Q.3** (a) Write a short note on crude distillation with neat diagram. **07**  
(b) Short note on manufacturing process of benzene through hydrodealkylation route. **07**
- Q.4** (a) Write and explain most common process to manufacture sulfuric acid with neat flow sheet. **07**  
(b) What are the feed stocks to produce synthesis gas? Draw the flow sheet to manufacture synthesis gas from naphtha. **07**
- OR**
- Q.4** (a) 1. Draw the neat flow diagram of manufacturing process of Urea. **04**  
2. Mention major engineering problems and uses of urea. **03**  
(b) Draw a neat flow diagram to manufacture phenol from cumene. **07**
- Q.5** (a) 1. Explain natural gas. **02**  
2. Draw a neat flow sheet to manufacture ethylene. **05**  
(b) Write a short note on manufacturing process of nitro benzene. **07**
- OR**
- Q.5** (a) Draw and explain a detailed flow sheet to manufacture phthalic anhydride. **07**  
(b) Mention chemicals produced from methanol. Also explain Monsanto process to produce acetic acid from methanol. **07**

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