Enroll No. _____

# Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous)

Affiliated to Saurashtra University, Rajkot

**SEMESTER END EXAMINATION NOVEMBER – 2016**

## M.Sc. Industrial Chemistry

## 16PICCC03 - INDUSTRIAL UNIT PROCESSES & REAGENTS

***Duration of Exam – 3 hrs*** ***Semester – I*** ***Max. Marks – 70***

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***Part A** (5x2= 10 marks)*

Answer **ALL** questions

1 Define: Acylation

2 What is the purpose of hydrogenation?

3 Enlist the sulfonating agent.

4 Draw the structures of following reagents: i) CDI, ii) DEAD

5 Draw the structure of Lead tetra acetate reagent.

***Part B** (5X5 = 25 marks)*

Answer **ALL** questions

6a Explain manufacturing of phenyl ethyl alcohol in detail.

**OR**

6b Draw only process flow diagram for manufacturing of chlorobenzene.

7a Explain manufacturing of benzoic acid in detail.

**OR**

7b Explain hydrogenation of oil by recycle apparatus process.

8a Discuss nitration of paraffinic hydrocarbon in detail.

**OR**

8b Explain types of esterification reactions.

9a Write the preparation and any three applications of Carbonyldiimidazole (CDI) reagent.

**OR**

9b Write the preparation and any three applications of $LiAlH_4$ reagent.

10a Write preparation, properties and two applications of N-Bromosuccinamide.

**OR**

10b Give preparation, properties and applications and Sodamide reagent.

## ***Part C (5X7 = 35 marks)***

Answer **ALL** questions

11a Discuss manufacturing of alkyl benzene for detergent in detail.

**OR**

11b Explain preparation of monochloroacetic acid and sodium monochloro acetate in detail.

12a Discuss hydrogenation of oil by mechanical agitator process in detail.

**OR**

12b Explain manufacturing of phthalic anhydride from oxidation of naphthalene in detail.

13a Explain preparation of P-nitroacetanilide in detail.

**OR**

13b Discuss mechanism and thermodynamics of sulphonation in detail.

14a Explain preparation, properties and applications of Dicyclohexylcarbodiimide (DCC)

**OR**

14b Explain preparation, properties and applications of Diethylazodicarboxylate (DEAD)

15a Discuss properties and applications of Lead tetra acetate reagent.

**OR**

15b Draw structure of TPP and write preparation, mechanism and three applications.