Printed Pages : 3

ECH063

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 151857

Roll No.

B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15

PETROCHEMICAL TECHNOLOGY

Time : **3** Hours] [Total Marks : **100**

Note: Attempt all questions. All questions carry equal marks.

1 Attempt any four parts of the following: **5×4=20**

(a) Discuss the production and consumption pattern of petrochemicals in India.

(b) Discuss the feedstock's of petrochemical industries in India.

(c) Write the composition and application of Naphthas.

(d) Explain the importance of hydroforming of petroleum stocks.

(e) Write short notes on refinery off-gasses.

(f) Write the industrial application of Petroleum coke.

2 Attempt any **Two** parts of the following: **10×2=20**

(a) Discuss Fischer- Troposch technology for syngas. With the help of flow diagram discuss steam reforming process for syngas.

(b) Draw the various routes for the manufacture of adipic acid. With neat flow sheet discuss any one.

(c) What are chloromethanes? Discuss the chemistry of manufacture of chloromethanes and trichloroethylene.

3 Attempt any **Two** parts of the following **10×2=20**

(a) Discuss the manufacture process of acetylene via steam cracking of hydrocarbons with flow diagram and operating variables affecting the performance of steam cracker.

(b) Explain the major engineering problems involved in the manufacturing of Vinyl chloride monomer with its applications.

(c) Discuss the manufacture process of ethylene glycol with the help of flow sheet. Also mention the chemical reactions involved.

4 Attempt any **Two** parts of the following: **10×2=20**

(a) Explain the process of manufacture of isopropyl alcohol by direct hydration of propylene with flow diagram and chemical reaction involved

(b) Discuss the manufacture process of butadien with the help of flow sheet. Also mention the chemical reactions involved.

(c) Describe the process of manufacture of 2-ethyl hexanol with diagram and chemical reaction involved.

5 Attempt any Two parts of the following: **10×2=20**

(a) Describe manufacturing process for Caprolactam via dehydrogenation of cyclohexanone along with major engineering problems.

(b) Discuss the manufacture process of p-xylene from catalytic reforming with neat flow diagram. Also discuss the factor affecting the process.

(c) Explain the hydro-dealkylation process for the manufacture of benzene with neat flow sheet and chemical reaction involved.