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RN-6131/100

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B. E. - II (Sem. III) (Chemical) Examination

May / June – 2010

Unit Process

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

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. - 2 (Sem. 3) (Chemical)**

Name of the Subject :

☛ **Unit Process**

☛ Subject Code No. : **6 1 3 1** ☛ Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Answer different sections in **different** answer books.

(3) Give chemical reactions and draw neat diagram with parameters.

(4) Figures to the right indicate full marks.

(5) All notations carry their usual meanings.

SECTION - I

1 (a) Answer the following : **10**

(i) State various sulfonating agents.

(ii) Name of Nitrating agents used.

(iii) Application of amination by reduction.

(iv) Define DVS value and Nitric ratio.

(v) Define Halogenation and sulfonation.

(b) Write note on Biazzi nitrator. 8

2 Attempt any **two** : **16**

(a) Discuss different halogenating agents. Give sandmayer reaction.

(b) Manufacturing of vinyl chloride from ethylene by alkali route.

(c) Describe sulfonation of diethyl ether.

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3 Attempt any **two** : **16**

(a) Define unit process and unit operations. Give at least six examples of each.

(b) Define nitration and discuss manufacturing of mono-nitrobenzene by continuous nitration of benzene with 63% conc. HNO_3.

(c) Discuss various types of sulfonations with neat clean diagram.

SECTION - II

4 (a) Attempt the following : **5×2=10**

(i) Define oxidation and state oxidizing agents.

(ii) List catalyst used in ammination reaction in ammonolysis.

(iii) What is alkali hydrolysis? Explain with example.

(iv) Give examples of thermoplastic and thermosetting plastics.

(v) By which process ethanol is produced also give chemical reactions?

(b) Define polymerization. State and explain various methods of polymerization in homogeneous phase. 8

5 Answer the following : (any **two**) **8×2=16**

(a) Differentiate between steam reforming and partial oxydation for hydrogen production.

(b) Discuss manufacturing of aniline from chlorobenzene.

(c) Explain the following :

(i) Catalytic hydrogenation of olefins and aromatics.

(ii) List various sources of hydrogen production.

6 Answer the following : (any **two**) **8×2=16**

(a) Explain manufacturing of acetic acid from acetaldehyde.

(b) Discuss manufacturing of phenol from benzene sulfonic acid will all process parameters.

(c) Discuss :

(i) Importance of any two oxidizing agent.

(ii) Effect of pressure and temperature on hydrolysis.

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