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SARDAR PATEL UNIVERSITY

M. Sc. Semester - II Examination

Friday, April 2015

INDUSTRIAL CHEMISTRY

Subject: Unit processes

Date: 22/04/2014

Course No. : PS02CICH07

Time: 10:30 a.m. to 01:30 p.m.

Marks: 70

Q.1 Answer the following MCQ s (Attempt all) [08]

- I. Halogenations may carried out by ____
 - a. Addition
 - b. Substitution
 - c. Replacement
 - d. All of these
- II. During manufacturing of tetraethyl lead when all ethyl chloride is added, the pressure is _____.
 - a. 50 psi
 - b. 60 psi
 - c. 70 psi
 - d. 80 psi
- III. In the manufacturing of p-nitro acetanilide, the rate of feed is regulated By the capacity of the brine coil to control the temperature at _____°C
 - a. 3-5
 - b. 5-7
 - c. 7-9
 - d. 4-8
- IV. Copper in it's higher oxidation state, is capable of acting as _____.
 - a. Oxidizing agent
 - b. Reducing agent
 - c. Bleaching agent
 - d. None of these
- V. Conversion of starch into glucose and maltose by _____.
 - a. Enzyme cellulose
 - b. Amylase enzyme
 - c. Invertase
 - d. none of above
- VI. The most commonly used catalyst in alcoholysis is _____.
 - a. Boron trifluoride
 - b. 1- Methyl benzoate
 - c. Sodium alkoxide
 - d. Nickel
- VII. Who discovered high pressure catalytic condensation of CO & H₂?
 - a. Nuton
 - b. Fischer-tropsch
 - c. Hoben-Hosch
 - d. Otto roeien
- VIII. Oxo synthesis is discovered by _____.
 - a. Otto roeien
 - b. Newton
 - c. Hoben-Hosch
 - d. Fischer-tropsch

Q.2 Answer the following short question (Any seven) [14]

- I Draw the labelled diagram of continuous chlorinator reactor with evaporation.
- II Enlist the types of alkylator.
- III Write the function of sulfuric acid in the mixed acid used for nitration.
- IV Define unit process and unit operation
- V Define DVS and nitric ratio.
- VI Write the B_{AC}2 mechanism of hydrolysis.
- VII Define hydration with suitable example.
- VIII Write the reaction parameter such as pressure, temperature, & catalyst concentration used in hydroformylation.
- IX Discuss about recycle coefficient for the mixture of CO & H₂.

Q.3 (a) With the help of labelled diagram explain manufacture of BHC. [06]

(b) With the help of flow diagram explain manufacture of p - dichlorobenzene [06]

Or

(b) Write explanatory note on alkylating agents [06]

- Q.4** (a) With the help of flow diagram explain manufacture of nitrobenzene using fortified spent acid [06]
(b) Write explanatory note on manufacture of naphthalene β -sulfonic acid [06]
Or
(b) With the help of flow diagram explain manufacture of acetic acid [06]
- Q.5** (a) Write note on catalytic esterification. [06]
(b) With the help of flow diagram explain manufacture of vinyl acetate [06]
Or
(b) Write note on equipments used in hydration process [06]
- Q.6** (a) Write explanatory note on reaction units used for synthesis of methanol. [06]
(b) With the help of flow diagram explain manufacture of butyraldehyde and butanol. [06]
Or
(b) With the help of flow diagram explain manufacture of methanol. [06]

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