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RA-0720

Second Year B. Sc. Examination

March / April – 2010

Industrial Chemistry (Vocational) : Paper - V

(Unit Process in Organic Chemicals Manufacturing - II)

Time : **3** Hours] [Total Marks : **70**

Instructions :

(1)

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

Name of the Examination :

☛ **S. Y. B. Sc.**

Name of the Subject :

☛ **Industrial Chemistry (Vocational) - 5**

☛ Subject Code No. : **0 7 2 0** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) All sub questions of question No. 1 are compulsory.
(3) Give diagrams, figures and equations wherever necessary.
(4) Figures to the **right** indicate full marks of question.

1 Answer the following questions in brief : **15**

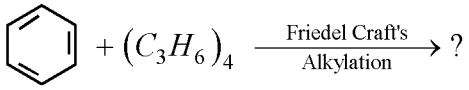
(i) Define oxidation. Enlist various oxidation reactions.

(ii) How silver oxide is used as oxidising agent? Explain giving example.

(iii) Enlist bifunctional catalysts for hydrogenation.

(iv) Give chemical reactions of esterification reaction and equation of equilibrium constant.

(v) Complete the reaction :



(vi) Give one example of Wurtz alkylation.

(vii) Complete the reaction :

$CH_2=C=O + C_2H_5OH$?

(viii) What is amination? Enlist various aminating agents.

(ix) Complete the reaction :

$RNO_2 + Zn + H_2SO_4$?

(x) Give the name of enzyme which is used in the manufacture of commercial alcohol from molasses.

(xi) What is temperature range of 'mercury in glass thermometer'? How upper limit of it can be increased?

(xii) What is critical temperature of gas?

(xiii) Define the terms : Range and Span.

(xiv) What is meant by drift and dead zone of an instrument?

(xv) Define : Dew Point Temperature (DTP)

2 (a) Explain with neat flow diagram manufacturing of benzoic acid. 4

OR

(a) Explain the working of hypochlorous acid and ozone as oxidising agents. 4

(b) Explain with neat flow diagram manufacturing of methanol. 4

OR

(b) What is petroleum hydrolysis? Discuss about destructive and non-destructive hydrogenation. 4

(c) Explain use of nickel and platinum as hydrogenation catalysts. 3

3 (a) Describe the manufacturing process of phenyl ethyl alcohol by Friedel Craft reaction. 4

OR

(a) How alkyl halides and alkyl sulphates are used as alkylating agents? 4

(b) Explain with neat flow diagram manufacturing of cellulose acetate. 4

OR

(b) Explain continuous process for manufacture of ethyl acetate with flow diagram. 4

(c) Write note on : Catalytic esterification. 3

4 (a) Discuss chemical and physical factors affecting ammonolysis. 4

OR

(a) Explain with neat flow diagram manufacturing process of m-nitroaniline from m-dinitrobenzene. 4

(b) Discuss in brief about miscellaneous reduction reaction. 4

OR

(b) Explain the following : 4

(i) Enzymatic hydrolysis

(ii) Vapour phase reduction of nitrobenzene.

(c) Explain : Ingold mechanism for ester hydrolysis. 3

5	(a)	Give an account of platinum resistance thermometer.	**4**
		OR	
	(a)	What is bimetallic strip? How it can be used to measure temperature?	**4**
	(b)	Give an account of direct and indirect measurement.	**4**
		OR	
	(b)	Write a note on : Temperature measurement using thermister.	**4**
	(c)	Explain : Pressure Spring thermometer.	**3**
6	(a)	Explain - continuous viscosity measurement using rotameter.	**4**
		OR	
	(a)	Explain construction, working and range of U-tube menometer.	**4**
	(b)	Write note on radiation level detectors.	**4**
		OR	
	(b)	Discuss construction and working of tap-liquid level gauge.	**4**
	(c)	Give the classification of pressure measuring instruments.	**3**