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SARDAR PATEL UNIVERSITY

M. Sc. Semester - I Examination
Thursday, 27th October 2016
INDUSTRIAL CHEMISTRY
Subject: Industrial organic chemistry

Date: 27/10/2016 **Course No. : PS01CICH10**
Time: 10:30 a.m. to 01:30 p.m. **Marks: 70**

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

I. The activity of BF_3 is inferior compare to _____.
(a) DCC (b)Platinum
(c) $AlCl_3$ (d) Benzoic acid

II. The process of addition of one molecule of ozone to one double bond or triple bond to form ozonide is called as _____.
(a) Hydration (b)Ozonization
(c) Amination (d) Reduction

III. _____ is defined as neutral, divalent carbon intermediates in which a carbon is covalently bonded to two atoms.
(a) Nitrene (b) Carbanion
(c) Carbene (d) Enamines

IV. The reaction in which two atoms or groups are removed from a molecule without being replaced by other atoms or groups _____ reaction.
(a) Addition (b) Substitution
(c) Elimination (d) Molecular reaction

V. The condensation reaction between an aldehyde or a ketone with a compound having an active methylene group is known as _____.
(a) Aldol condensation (b) Cross aldol condensation
(c) Knoevenagel condensation (d) Cannizzaro reaction

VI. The reaction of an aromatic aldehyde with an aliphatic acid anhydride in presence of sodium or potassium salt of the acid corresponding to anhydride to give an α,β–unsaturated acid is known as _____.
(a) Aldol condensation (b) Cross aldol condensation
(c) Knoevenagel condensation (d) Perkin reaction

VII. DMF is insoluble in_____.
(a) Aliphatic hydrocarbon (b) Alcohol
(c) Ketone (d) Ether

VIII. The methanol carbonylation process for manufacturing of DMF utilized _____ catalyst.
(a) Nitric acid (b)Sodium methoxide
(c) Phosphoric acid (d) Sulfuric acid

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

I Enlist advantages of polyphosphoric acid over sulphuric acid
II Enlist uses of diazoacetic ester
III Define homolytic and heterolytic fission
IV Write in brief about substitution reaction
V Define condensation and write principle of Darzen condensation
VI Define oxidation and reduction
VII Draw the flow diagram for manufacture of benzoic acid from phthalic acid

VIII Enlist the uses of benzoic acid
IX Enlist uses of DMSO

Q.3	(a)	Write preparation and uses of aluminium –tert– butoxide	[06]
	(b)	Write preparation and uses of selenium	[06]
		Or	
	(b)	Write preparation, properties and uses of perbenzoic acid	[06]
Q.4	(a)	Differentiate between nucleophiles and electrophiles	[06]
	(b)	Write explanatory note on carbonium ion	[06]
		Or	
	(b)	Write note on free radical and enamines	[06]
Q.5	(a)	Write principle, mechanism and application of Dakin reaction	[06]
	(b)	Write principle, mechanism and application of Wolf-kishner reaction	[06]
		Or	
	(b)	Write principle, mechanism and application of Meerwein-ponndorf reaction	[06]
Q.6	(a)	Write manufacture, properties and uses of diethyl ether	[06]
	(b)	With the help of flow diagram explain manufacture of THF by acetoxylation of butadiene	[06]
		Or	
	(b)	With the help of flow diagram explain manufacture of butyl alcohol by fermentation process. Also write the uses of butanol.	[06]

Best of Luck.....