

Date : 01.10.2010

CHEMISTRY PAPER- II

Time : 2 Hrs.

Question Paper : October 2010

Max. Marks : 40

(Organic and inorganic Chemistry)

Q. 1. Select and write the most appropriate answer from the given alternatives for each sub-question : (8)

- (1) Which of the following is NOT a nucleophile ?
(a) Ammonia (b) Ammonium ion (c) Primary amine (d) Secondary amine
- (2) Phenol can be prepared by -
(a) Dow's process (b) Aldol condensation
(c) Cannizzaro's reaction (d) Williamson's synthesis
- (3) Which among the following oxidation states is NOT exhibited by lanthanides ?
(a) + 2 (b) + 3 (c) + 6 (d) + 4
- (4) The Carboxylic acids and Esters containing the same number of carbon atoms are related to each other as ----
(a) Functional isomers (b) Chain isomers
(c) Geometrical isomers (d) Optical isomers
- (5) IUPAC name of diethyl methyl amine is ----
(a) methyl amino propane (b) ethyl methyl ethanamine
(c) methyl diethanamine (d) amino pentane
- (6) Molecular formula of 'Urotropine' is ----
(a) $C_6H_{12}N_4$ (b) $C_6H_{12}N_4O_2$ (c) $C_6H_{24}N_4$ (d) $C_6H_{24}N_4O_8$
- (7) 'Raffinose' is a ----
(a) Disaccharide (b) Trisaccharide (c) Mono saccharide (d) Tetra saccharide
- (8) 'Cephalosporin' is a ----
(a) Antibiotic (b) Hypnotic (c) Analgesic (d) Antipyretic

Q. 2 (A) Attempt any ONE : (2)

- (i) Define the following terms :
(a) Transition state (b) Energy of activation
- (ii) What is the action of following on glucose ?
(a) Acetic anhydride (b) Hydroxyl amine

(B) Attempt any ONE : (2)

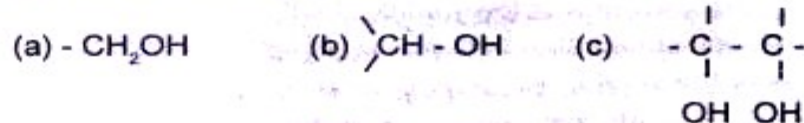
- (i) Write the expected electronic configurations of ----
(a) europium (Z = 63) (b) erbium (Z = 68)
- (ii) What is the action of the following ?
(a) Nitrous acid on ethyl amine
(b) Mixture of sodium and alcohol on acetonitrile.

(C) Answer the following : (4)

- (i) How (a) dimethyl ether and (b) ethyl methyl ether are prepared from diazomethane ?
- (ii) What is a 'Quaternary ammonium salt' ?
How is tetramethyl ammonium iodide is obtained by using a tertiary amine ?

Q. 3. (A) Attempt any ONE : (3)

- (i) Define : (a) Asymmetric carbon atom
(b) Enantiomers
(c) Racemic mixture
- (ii) How is 'Carbonyl group' converted into -



(B) Attempt any ONE :

(i) What happens when -

- (a) Acetic acid is heated with P_2O_5
- (b) Silver acetate is heated with methyl iodide.
- (c) Acetic acid is treated with sodium bicarbonate.

(3)

(ii) Define the following :

- (a) Fibre
- (b) Ester
- (c) Tranquilizer

(C) Answer the following :

What are 'Actinides' ? Write their position in the Periodic table.

(2)

Q. 4. (A) Answer the following.

Explain : (a) Cannizzaro's reaction (b) Clemmensen's reduction

(4)

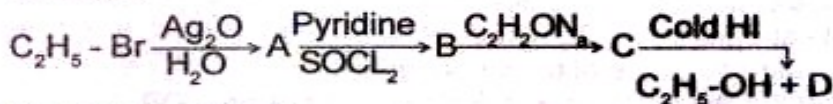
(B) Attempt any ONE :

(i) How Phenol is prepared from -

- (a) Aniline
- (b) Chlorobenzene by Rasching process ?

Give distinguishing test between Phenol and Alcohol.

(ii) Complete the following reaction and identify **A**, **B**, **C** and **D** with correct formulae.



(4)

Q. 5. (A) Attempt any ONE :

(i) How is 'tri-iodomethane' prepared from ethanol ?

(ii) How are ethyl alcohol, iso-propyl alcohol and tertiary butyl alcohol distinguished from each other ?

What is the action of dilute sulphuric acid under pressure, on ethoxy ethane ?

(4)

(B) Attempt any TWO :

(i) Write 'Biuret test' for proteins.

What are 'antacids' ?

(ii) Differentiate between Fats and Oils.

(iii) Write names and chemical formulae of the chemical substances used in the preparation of Nylon - 66.

(4)



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