

CHEMISTRY QUESTION PAPER

Time : 2 Hrs.

Max. Marks : 40

- Q. 1. Select and write the most appropriate answer from the given alternatives for each sub-question :** [8]
- (i) Which of the following is NOT a nucleophile? (1)
 (a) Ammonia (b) Ammonium ion (c) Primary amine (d) Secondary Amine
- (ii) Phenol can be prepared by (1)
 (a) Dow's process (b) Aldol condensation
 (c) Cannizzaro's reaction (d) Williamson's synthesis
- (iii) Which among the following oxidation states is NOT exhibited by lanthanides? (1)
 (a) +2 (b) +3 (c) +6 (d) +4
- (iv) The Carboxylic acids and Esters containing the same number of carbon atoms are related to each other as (1)
 (a) Functional isomers (b) Chain isomers
 (c) Geometrical isomers (d) Optical isomers
- (v) IUPAC name of diethyl methyl amine is (1)
 (a) methyl amino propane (b) ethyl methyl ethanamine
 (c) methyl diethanamine (d) amino pentane
- (vi) Molecular formula of 'Urotropine' is (1)
 (a) $C_6H_{12}N_4$ (b) $C_6H_{12}N_4O_2$ (c) $C_6H_{24}N_4$ (d) $C_6H_{24}N_4O_6$
- (vii) 'Raffinose' is a (1)
 (a) Disaccharide (b) Trisaccharide (c) Mono saccharide (d) Tetra saccharide
- (viii) 'Cephalosporin' is a (1)
 (a) Antibiotic (b) Hypnotic (c) Analgesic (d) Antipyretic

Q. 2 (A) Attempt any ONE : [8]

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

(B) Attempt any ONE :

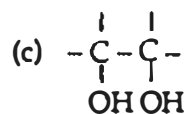
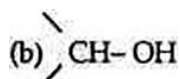
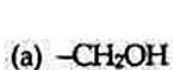
- (i) Write the expected electronic configurations of :
 (a) europium (Z = 63) (b) erbium (Z = 68) (2)
- (ii) What is the action of the following ? (2)
 (a) Nitrous acid on ethyl amine
 (b) Mixture of sodium and alcohol on acetonitrile.

(C) Answer the following :

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

Q. 3 (A) Answer any ONE : [8]

- (i) Define optical : (3)
 (a) Asymmetric carbon atom, (b) Enantiomers, (c) Racemic mixture.
- (ii) How is 'Carbonyl group' converted into :



(B) Attempt any ONE :

- (i) What happens when : (3)
 (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.
- (ii) Define the following : (3)
 (a) Fibre (b) Ester (c) Tranquillizer.
- (C) Answer the following :**
 What are 'Actinides' ? Write their position in the Periodic table. (2)

Q. 4 (A) Answer the following : [8]

Explain : (a) Cannizzaro's reaction, (b) Clemmensen's reduction. (4)

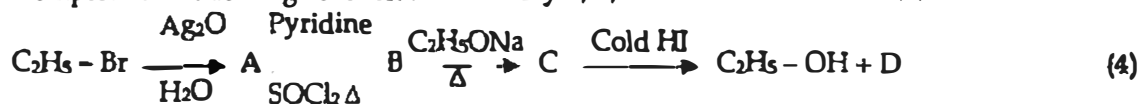
(B) Attempt any ONE :

(i) How Phenol is prepared from –

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

Give distinguishing test between Phenol and Alcohol. (4)

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



Q. 5 (A) Attempt any ONE : [8]

(i) How is 'tri-iodomethane' prepared from ethanol ? (4)

(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 'antiacids' ? (2)

(ii) Differentiate between Fats and Oils. (2)

(iii) Write names and chemical formulae of the chemical substances used in the preparation of Nylon - 66. (2)