H.S.C. CHEMISTRY PAPER - II

(Organic and Inorganic Chemistry)

Time : 2 Hours) **Queastion Paper : September 2009** (Max. Marks : 40

❊ Note : Refer to Question Paper March 2008. ❊

Q. 1. Select and write the most appropriate answer from the given alternatives for each sub-question. [8]

(i) ISO- propylindene dichloride on alkaline hydrolysis gives ..... (1)

(a) Propan - 2 - ol (b) Propanone (c) Propanal (d) Propanoic acid

(ii) Which of the following compounds shows optical activity ..... (1)

(a) n-butyl chloride (b) iso-butyl chloride (c) sec-butyl chloride (d) t-butyl chloride

(iii) The gas evolved, when ethyl alcohol reacts with sodium metal is ..... (1)

(a) Cl_2 (b) N_2 (c) H_2 (d) O_2

(iv) The conjugated protein among the following is ..... (1)

(a) Albumin (b) Haemoglobin (c) Keratin (d) Peptone

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(v) Lanthanides belong to ..... (1)
(a) Group -1 (b) Group-2 (c) Group -3 (d) Group-4

(vi) Identify the drugs used to lower down the body temperature ..... (1)
(a) Analgesics (b) Antibiotics (c) Anaesthetics (d) Antipyretics

(vii) ISO-propyl amine is an example of ..... (1)
(a) Primary amines (b) Secondary amines
(c) Tertiary amines (d) Branched amines

(viii) How many acids and esters can be represented for the molecular formula $C_6H_6O_2$? (1)
(a) 1 acid and 1 ester (b) 1 acid and 2 esters
(c) 2 acids and 2 esters (d) 2 acids and 1 ester

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

(i) Write expected electronic configurations of- (2)
(a) Nd (z = 60) (b) Tm (z = 69)

(ii) Classify the following into electrophile and nucleophile. (2)
(a) NO_2^+ (b) NH_3 (c) BF_3 (d) NH_4^+

(B) Attempt any ONE :

(i) How is Nylone - 66 prepared? (2)

(ii) How is Apirin prepared? Write it's two uses. (2)

(C) Answer the following :

(i) How is ethyl acetate obtained from - (2)
(a) Silver acetate (b) Acetic acid?

(ii) Define the terms :
(a) Simple Protein (b) Fibre

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

(i) How are the following compounds prepared from diazomethane?
(a) Dimethyl ether (b) Ethyl methyl ether
Write structures of enantiomers of lactic acid. (3)

(ii) Convert the following :
(a) Acetone into pinacol (b) Formaldehyde into urotropine

(B) Attempt any ONE :

(i) What is the action of the following reagents on ethanol? (3)
(a) Thionly chloride
(b) Mixture of red phosphorus and bromine
(c) Acidified potassium dichromate?

(ii) Why is chloroform stored in dark coloured bottles?
What happens when ethyl methyl ether is hydrolysed by using dil. H_2SO_4 (3)

(C) Answer the following :

Explain Hardening of oil. (2)

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

Write molecular formulae and IUPAC names of the compounds represented by $C_2H_4Cl_2$? (4)
Give one chemical test to distinguish between them.

(B) Attempt any ONE of the following :

(i) How is carbonyl group converted into- (4)
(a) $-CH_2OH$ (b) $>CHOH$ (c) $=CH_2$ (d) $-\overset{|}{\underset{|}{C}}-OH$

(ii) How is carbolic acid prepared from benzene sulphonic acid? (4)
What is the action of conc. H_2SO_4 on pheonl at 373 K?

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

(i) Draw energy profile diagram of SN^2 reaction and explain the following terms. (4)
(a) Transition state (b) Heat of reaction (c) Energy of activation.

(ii) How is ethyl amine prepared from - (4)
(a) Nitro alkane (b) Oxime
Explain basic nature of Amines.

(B) Attempt any TWO :

(i) How is acetic acid converted into (2)
(a) Acetamide (b) Acetic anhydride

(ii) Classify the following carbohydrates- (2)
(a) Cellulose (b) Maltose (c) Raffinose (d) Fructose

(iii) Explain why, $_{63}Eu$ and $_{70}Yb$ show + 2 oxidation state. (2)