FINAL EXAMINATION [2013]
CLASS XI [CHEMISTRY]

{FM=70
TIME - 3hrs}

Section A

(A) (1) What is hydrolith. Give its reaction with water (10)

(2) Explain the principle involved in the preparation of washing soda

(3) Give the reaction for the preparation of Plaster of Paris. Why is it important to maintain the temperature

(4) Explain why s block elements impart colour to the flame

(5) Explain what is photoelectric effect.

(B) (1) Explain in details the steps involved in the extraction of Mg by Dow's process (10)

(2) What are the conditions necessary for a compound to show optical isomerism

(3) Write short notes on Geometrical Isomerism.

(4) Write down the no of isomerism and I.U.P.A.C name of n-heptane

(5) Alkali metals when dissolved in liquid NH_3 imparts Blue in color and also becomes good conductor

(C) An organic compound (A) is used in oxy-acetylene flame with this information complete the road map given below. (10)

$$(A) \xrightarrow{NaNH_2} (B) \xrightarrow[\text{Catalyst}]{\text{Lindlar's}} (C) \xrightarrow[H_2O]{O_3/Zn} (D) \xrightarrow[K_2Cr_2O_7]{[O]} (E) \xrightarrow{Na} (F)$$

$$\xrightarrow{\text{Sodalime}} (G) \xrightarrow[Cl_2]{\text{Controlled}} (H) \xrightarrow[KOH]{\text{alcoholic}} (I) \xrightarrow{Br_2} (J) \xrightarrow[KOH]{\text{alcoholic}} (K)$$

(D) Solve the following conversions (10)

(1) Ethane to Glyoxal

(2) Acetylene to acetone

(3) Ethane to methane

Write short notes on any (2)

(1) Corey House Synthesis (2) Hydroboronation reaction (3) Wurtz reaction

Section B

(1) (a) Write the lewis dot structure of the following species (10)

(i) Al_2Cl_6 (ii) H_2SO_4

(b) Why H_2O is liquid but H_2S is a gas at room temperature.

(c) ClF_3 exists while FCl_3 does not

(d) Electronegativity of Br is less than that of F yet BF_3 is weaker lewis acid as compared to BBr_3. Explain

(e) Why mobility of H^+ ions in ice is greater as compared to liquid water

(2) (a) Give points of similarities and difference between V.B.T and M.O.T (3)

(b) Write down the hybridized structure of the following compound. (5)

NH_3, H_2O, C_2H_2, XeF_2, PCl_5

(c) Using M.O.T prove that O_2 is a paramagnetic substance. (2)

(3) (a) 10cc of H_2O_2 Solution when reacted with KI Solution produced 0.5gm of Iodine. Calculate the percentage of purity of H_2O_2 [I = 127] (2)

(b) Calculate the weight of lime (CaO) that can be prepared by heating 200 Kg of limestone [$CaCO_3$] which is 95% pure (2)

(c) State and explain Law of mass action and Find out a relationship between K_p, K_c and K_z (2)

(d) Derive a formula to calculate the normality of an acid of Specific gravity (d) Containing x% by wt. The equivalent wt of the acid is (E) (2)

(e) (1) Define solubility and solubility product,
(2) Explain Buffer action in acidic and Basic System. (2)