

FINAL EXAMINATION [2013]  
CLASS XI [CHEMISTRY]

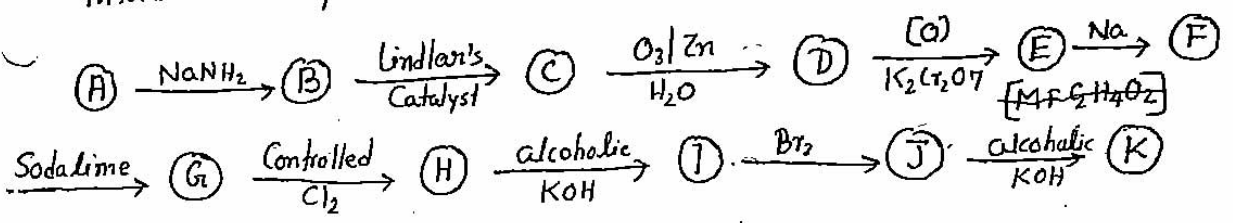
{ FM-70 }  
{ TIME-3hrs }

Section A

- (A) ① What is hydrolysis. 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 IUPAC name of n-heptane  
 ⑤ Alkali metals when dissolved in liquid  $\text{NH}_3$  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)



(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 Hydroboration 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) 10 cc of  $H_2O_2$  solution when reacted with KI solution produced 0.5 g 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) (i) Define solubility and solubility product, (2)
- (ii) Explain Buffer action in acidic and Basic System. (2)