CLASS XI

CHEMISTRY

Section A

(1) Solve the following conversions (10)

(a) Acetylene to acetone

(b) Methane to acetaldehyde

(c) Ethane to methane

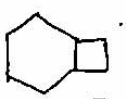
(d) ethene to propene

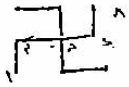
(e) Ethane to acetylene

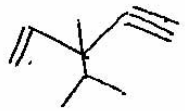
(2) (i) A Compound (A) which on ozonolysis gives pentane-2-one is the only product what is (A) (10)

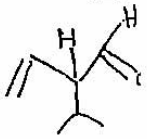
(ii) A Compound (A) $[C_2H_4O]$ which on oxidation gives (B) B, on treatment with NaOH and Soda lime gives a gas (C) C, on Controlled Chlorination gives (D) D, on treatment with Na in the presence of dry ether produces a compound (E)

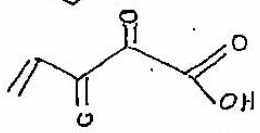
(3) Write down the I.U.P.A.C names of the following (10)

(1) 

(2) 

(3) 

(4) 

(5) 

(6) GLYCEROL (7) ISO PROPYL ALCOHOL

(8) LACTIC ACID (9) ACETIC ACID (10) GLYCOL

(4) (i) How can you seperate, methane, ethylene and acetylene from each other (10)

(ii) Write short notes on any (2) (3)

(a) Corey House synthesis (b) Hydroboronation reaction (c) Clemenson's reduction

(d) Wolff Kushner's reaction (e) Wurtz's reaction / Wurtz-Fittig's reaction (f) Dehydration of alcohol

(1) (a) Illustrate clearly the electronic configuration of the following [any 4]

Cu^{2+}, I^{2+}, La, Cr, Nc

(b) How do you arrive at the oxidation no of Cr in $[K_2CrO_4]$ (b) Cr_2O_7

(c) Explain why n-pentane has higher boiling point than neopentane

(d) Which quantum no tends to specify the coordination in space

(2) (a) What are the Basic postulates of Niels Bhor theory (10)

(b) Deduce the mathematical formulation of energy and spectra of an electron moving around the nucleus.

(3) (a) What volume of O_2 will be required for complete combustion of 18.2 litres of propane at N.T.P (5)

(b) 7.5 ml of a hydrocarbon gas was exploded with excess of O_2. On cooling it was found to have undergone a contraction of 15 ml. If the V.D of hydrocarbon is 14 determine its molecular formula

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(4) (a) Calculate the concentration of $Na_2S_2O_3, 5H_2O$ solution in gm/litre 10 ml of which just decolorised 15 ml of N/20 iodine sol^n (10)

(b) 10 ml of $K_2Cr_2O_7$ sol^n liberated iodine from KI solution. The liberated iodine was titrated by 16 ml of M/25 sodium thiosulphate sol^n Calculate the concentration of $K_2Cr_2O_7$ sol^n. in gm/litre

(5) (a) Balance the following equation by Ion electronical method (10)

(1) $KMnO_4 + HCl \longrightarrow KCl + MnCl_2 + H_2O + Cl_2$

(2) $S + HNO_3 \longrightarrow H_2SO_4 + NO_2 + H_2O$

(3) $K_2Cr_2O_7 + FeSO_4 + H_2SO_4 \longrightarrow K_2SO_4 + Fe_2(SO_4)_3 + Cr_2(SO_4)_3$

(b) Define Normality, Molarity and Molality.