CLASS :- HSP II **SUBJECT: CHEMISTRY**

M. MARKS: 70 **TIME : 3 HOURS**

General Instuctions :-

1.	There are total four sections in the question paper. All questions are compulsory.	Marks
2.	Section –A Contains 10 Objective type questions / Multiple choice questions of 1 mark each.	1*10 =10 marks
3.	Section – B Contains 9 Very Short Answer type Questions of 2 marks each to be answered in 20 to 30 words.	2*9 = 18 marks
4	Section – C Contains 9 Short Answer Type Questions of 3 marks each to be answered in 100 to 150 words	3*9 = 27 marks
5.	Section – D Contains 3 Long Answer Type Questions of 5 marks each to be answered in 150 to 200 words.	5*3 = 15 marks
6.	Use Log tables, if necesssary, use of scientific calculators is not allowed.	

SECTION A

Q1. Select the correct one.

(i) The molarity of pure water is :

(a) 5.556 mol/litre (b) 55.56 mol/litre (c) 18 mol/litre (d) 0.18 mol/litre

(ii) Which of the following conditions is correct for an ideal solution ?

(a) $\Delta H_{mix} = 0$ & $\Delta V_{mix} = 0$

(b) $\Delta H_{mix} > 0$ & $\Delta V_{mix} > 0$

(c) $\Delta H_{mix} < 0$ & $\Delta V_{mix} < 0$

(d) $\Delta H_{mix} > 0$ & $\Delta V_{mix} < 0$

(iii) Which of the following is not a good conductor of electricity ?

(a) CH_3COONa

(b) C_2H_5OH

(c) NaCl

(d) KOH

(iv) The units of rate contant for Second Order Reaction is

(a) mol $litre^{-1}$ sec^{-1}.

(b) litre mol^{-1} sec^{-1}

(c) $litre^2 mol^{-2} sec^{-1}$

(d) sec^{-1}

(v) Which of the following Oxidation state is common for all Lanthanoids ?

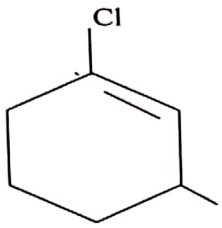
(a) +3

(b) +2

(c) +4

(d) +5

(vi) The IUPAC name of the compound shown below



is

(a) 2- Bromo -6 – chlorocyclohex -1 – ene

(b) 6 – Bromo -2 – cyclochlorohexene

(c) 3 – Bromo -1 – chlorocyclohexene

(d) 1 – Bromo – 3 – chlorocyclohexene

(vii) Which of the following is most acidic ?

(a) Benzyl alcohol

(b) Cyclohexanol

(c) Phenol

(d) m – Chlorophenol

(viii) The product of the following reaction is $CH_3CN \xrightarrow{Na(Hg) + C_2H_5OH} X$

(a) CH_3CONH_2

(b) $CH_3\text{-}CH_2\text{-}NH_2$

(c) C_2H_6

(d) $CH_3\text{-}NH\text{-}CH_3$

(ix) Hydrolysis products of Lactose are

(a) glucose and glucose

(b) glucose and fructose

(c) glucose and galactose

(d) none of these

(x) Vitamin A is

(a) Ascorbic acid

(b) Thiamine

(c) Calciferol

(d) Retinol

SECTION B

Q2. Short Answer Type Questions

(i) Define the terms

a) Coordination number

(b) Ligands

(ii) Write the IUPAC names of

(a) $[Cu(NH_3)_4SO_4]$ (b) $[Ni(CN)_6]^{2-}$

(iii) What is Markovnikov's Rule.

(iv) Distinguish between Primary, Secondary and Tertiary alchols by Lucas test.

(v) What is Carbylamine reaction?

(vi) Give sources and deficency diseases of Vitamin C & D.

(vii) Define Rate of a Reaction . Give one example of Zero Order Reaction.

(viii) Define Activation energy and write Arrhenius equation.

(ix) Give elementary idea of Collision theory.

SECTION C

Q3. Short Answer Type Questions

(i) State & Explain Faraday's 2nd Law of electrolysis.

(ii) Explain Denaturation of Proteins.

(iii) Write three methods of Preparation of Amines.

(iv) Give three oxidising properties of $K_2Cr_2O_7$.

(v) What is Lanthanide Contraction ? What are the causes of Lanthanide Contraction ?

(vi) What is meant by unidentate, bidentate and hexadentate ligands ? Give examples.

(vii) What are the effects caused by Freons and DDT on the environment ?

(viii) Discuss :

(a) Reimer – Tiemann's Reaction

(b) Kolbe's Reaction

(ix) What is :

(a) Gattermann – Koch Reaction

(b) Fries Rearrangement .

SECTION D

Q4. Long Answer Type Questions

(i) Define Molality & Normality . Calculate the molarity and normality of a solution of H_2SO_4 having 0.49 gm of it dissolved in 450 ml of solution.

OR

Define depression in freezing point . How can you calculate the molecular mass of a non – volatile solute with it .

(ii) Define Corrossion of a metal. Explain the mechanism of rusting of iron.

OR

What is Kohlrausch's Law ? Explain its application for calculation of molar conductivity at infinite dilution for weak electrolytes.

(iii) Write five methods of preparation of Ketones.

OR

Discuss :-

(a) Wolf – Kishner's Reduction

(b) Rosenmund's Reduction

(c) Stephen Reduction