ICSE Board
Class X Chemistry
Gold Series
Sample Paper- 1

Time: 1½ hrs **Total Marks: 80**

General Instruction:

1. Answers to this paper must be written on the paper provided separately.
2. You will NOT be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper.
The time given at the head of paper is the time allowed for writing the answers.
This question paper is divided into two sections.
3. **Section I** contains one question with parts (a) to (h); all the eight parts are to be answered.
4. **Section II** contains six questions numbered 2 to 7. You are to answer any four of these questions.
The intended marks of questions or for parts of questions are given in brackets **[ ]**.

SECTION-I (40 Marks)

Attempt **all** questions from this section.

Question 1

(a) Name the following: **[5]**

(i) A green coloured compound formed when an orange compound is heated.
(ii) An insoluble salt obtain when Sulphur dioxide is passed through lime water.
(iii) Drying agent for Ammonia.
(iv) Essential product formed when Hydrogen sulphide solution reacts with an oxidizing agent.
(v) The process by which thin coating of zinc is made over the surface of Iron.

(b) Certain pair of substances from the list given below react together to give salts. Choose the correct pair of substances and write only the balanced chemical equation for the laboratory preparation of salts. **[5]**

List: Zinc, Iron, Chlorine, Sulphur, Copper oxide, Copper, dilute Sulphuric acid, barium chloride, Sodium carbonate, Magnesium chloride.

(i) Zinc sulphate
(ii) Copper sulphate
(iii) Magnesium carbonate
(iv) Iron (III) chloride
(v) Iron (II) sulphide

(c) Write balanced chemical equations for the following reactions: **[5]**

(i) Sulphur reacts with concentrated Nitric acid.

(ii) Phosphorus reacts with concentrated Nitric acid.

(d) **[5]**

Copy and complete the following table showing the trends of the various periodic properties.

Periodic property	Group	Period
(1) Ionisation energy	(i) _____	(ii) _____
(2) Electron affinity	(iii) _____	(iv) _____
(3) Electronegativity	(v) _____	(vi) _____
(4) Atomic size	(vii) _____	(viii) _____
(5) Reducing property	(ix) _____	(x) _____

(e) What do you observe when: **[5]**

(i) Concentrated sulphuric acid is added to sugar crystals?

(ii) Ammonia mixes with Hydrogen chloride gas?

(iii) Dilute Hydrochloric acid is added to Sodium carbonate solution?

(iv) Ammonium hydroxide is added to Zinc nitrate solution, first a little and then in excess?

(v) Sulphur dioxide is passed through acidified Potassium dichromate solution?

(f) Name the products obtained at cathode and at anode during the electrolysis of: **[5]**

(i) Molten lead bromide (inert electrodes)

(ii) Aqueous solution of Sodium chloride (inert electrodes)

(iii) Copper sulphate solution (inert electrodes)

(iv) Molten sodium chloride

(v) Molten potassium chloride

(g) What type of bonding takes place in the following compounds? **[5]**

(i) Sodium chloride

(ii) Carbon tetrachloride

(iii) Ammonia

(iv) Methane

(v) Calcium oxide

(h) The following statements are correct only under certain conditions. Rewrite each statement including appropriate conditions underlined in your answer: **[5]**

(i) Hydrogen chloride gas is a covalent compound.

(ii) Ammonia turns red litmus to blue.

(iii) Sulphuric acid is least volatile acid.

(iv) Magnesium reacts with Nitrogen to form Magnesium nitride.

(v) Hydrogen chloride is soluble in water.

SECTION-II (40 Marks)

(Attempt any **four** questions from this Section)

Question 2 **[10]**

(a)

(i) During the electrolysis of Silver over copper spoon, the electrolyte used must contain (1)_____ ions. The (2) _____ is hanged at cathode. (3)_____ is made as anode. The anode is (4) _____ in nature.

(ii) Give the equations taking place at cathode and at anode during the electroplating of silver over Copper spoon.

(b)

(i) LPG stands for liquefied petroleum gas. Varieties of LPG are marketed including a mixture of propane (60 %) and butane (40%). If 10 litre of this mixture is burnt, find the total volume of carbon dioxide gas added to the atmosphere.

Combustion reaction can be represented as:

$C_3H_8(g) + 5O_2(g)$? $3CO_2(g) + 4H_2O(g)$

$2C_4H_{10}(g) + 13O_2(g)$? $8CO_2(g) + 10H_2O(g)$

(ii) Calculate the percentage of nitrogen and oxygen in ammonium nitrate.[Relative molecular mass of ammonium nitrate is 80,H=1,N=14,O=16].

Question 3 **[10]**

(a)

(i) Name the compound of Lead present in Galena.

(ii) Name the gas released when above named Lead compound is roasted.

(b) Define:

(i) Ore

(ii) Gangue

(c) Name the process by which:

(i) Aluminium ore is purified

(ii) Molten alumina is reduced

(iii) Impure aluminium is purified

Question 4 **[10]**

(a)

(i) The laboratory preparation of methane from sodium acetate.

(ii) The industrial preparation of methanol from water gas.

(iii) The reaction of one mole of ethene with one mole of chlorine gas.

(iv) The preparation of ethyne from 1, 2 - dibromoethane.

(b) State how the following conversions can be carried out.

(i) Ethyl chloride to ethyl alcohol

(ii) Ethyl chloride to Ethene

(iii) Ethene to Ethyl alcohol

(iv) Ethyl alcohol to Ethene

(c)

(i) Define isomerism.

(ii) (ii) Give the IUPAC name of the isomer C4H10 which has a branched chain.

Question 5 **[10]**

Write observations and balanced equations for the following reactions.

(i) Sodium hydroxide is added dropwise till in excess to a solution of Zinc sulphate.

(ii) Ammonium hydroxide is added first in a small quantity and then in excess to a solution of copper sulphate.

Question 6 **[10]**

(a) State whether the following statements are True or False.

(i) Carbon dioxide is a neutral oxide.

(ii) Acetic acid is a tribasic acid.

(b) Electrons are getting added to an element 'Y'.

(i) Is 'Y' getting oxidizing or reduced?

(ii) What charge will 'Y' have after the addition of electrons?

(iii) Which electrode will 'Y' migrate during the process of electrolysis?

(c) Fill in the blanks using the correct options:

(i) Metals have _____ ionization potential (low/high).

(ii) Group 18 elements have _____ valence electrons (4/8) with the exception of _____ (He/Ne) with _____ electrons (2/8) in valence shell.

(iii) Group 2 elements are called _____ metals (alkali/alkaline earth).

Question 7 **[10]**

(a)

(i) How is Sulphur dioxide obtained from Sodium sulphite and Copper chips? Give balanced chemical equations only.

(ii) Name the acid formed when Sulphur dioxide is dissolved in water.

(iii) What are the salts of above named acids called as?

(b) The following questions are related to dilute Hydrochloric acid:

(i) What is the basicity of hydrochloric acid?

(ii) Name two metallic nitrates which react with dilute Hydrochloric acid to give white precipitate.

(iii) Name the gas liberated when dilute Hydrochloric acid reacts with active metals.