MOCK TEST PAPER – 2

General Instructions : Same as in Sample Question Paper.

SECTION-I (40 Marks)

Attempt all questions from this Section.

Question 1.

(a) Name the gas evolved in each of the following: [5]

(i) Dilute sulphuric acid reacts with sodium sulphite.

(ii) Water is added to calcium carbide.

(iii) Magnesium nitride reacts with hot water.

(iv) Sodium propanoate is heated with soda lime.

(v) Lead di oxide is heated with concentrated hydrochloric acid.

(b) State one observation for each of the following : [5]

(i) Lead nitrate crystals are strongly heated in a test tube.

(ii) Sodium hydroxide solution is added to ferrous sulphate solution.

(iii) Ammonium chloride is heated with calcium hydroxide.

(iv) Dilute nitric acid and copper turnings are heated.

(v) Magnesium ribbon is added to dilute hydrochloric acid.

(c) Some word/words are missing in the following statements. Write these statements in correct form. [5]

(i) Sodium argento cyanide is used as electrolyte for silve plating.

(ii) Barium chloride gives a white precipitate with sodium sulphate.

(iii) Sulphuric acid on heating with soidum chloride gives hydrogen chloride gas.

(iv) Water on electrolysis gives hydrogen gas at cathode and oxygen gas at anode.

(v) Strong electrolytes contain ions as well as molecules in solution.

(d) Choose the correct answer from the choices given [5]

(i) Metallic oxide which gives a blue solution with dilute sulphuric acid.

(a) Calcium oxide (b) Copper oxide

(c) Zinc oxide (d) Lead oxide

(ii) An ore of zinc is

(a) Calamine (b) Bauxite

(c) Haematite (d) Cryolite

(iii) Metal extracted by electrolysis is

(a) Zinc (b) Iron

(c) Aluminium (d) Lead

(iv) A compound which has ionic, covalent as well as co-ordinate bond is

(a) Nitrogen (b) Ammonium chloride

(c) Hydrogen chloride (d) Sodium chloride

(v) A gas which turns acidified potassium chromate solution orange to green is

(a) Carbon dioxide (b) Ammonia

(c) Chloride (d) Sulphur dioxide

(e) Acetylene buns in air according to the equation. [5]

$$2C_2H_2(g) + 5O_2(g) \rightarrow 4CO_2(g) + 2H_2O(g)$$

(i) What volume of oxygen is required for the complete combustion of 100 cm^3 of acetylene.

(ii) What is the volume of carbon dioxide produced at the same time.

(iii) What do you understand by the term "Molar volume"?

(iv) Which law you have used for the calculations in (i) and (ii).

(f) (i) Give the structural formulae of ethanoic acid. [5]

(ii) Your mother uses this acid for cooking by the name of _____.

(iii) How will you convert ethanoic acid to ethyl acetate.

(iv) How can you identify ethyl acetate by one physical property.

(g) Match the following. [5]

Column A	*Column B*
1. Catalyst for Habers Process	A. Vanadium penta-oxide.
2. Catalyst for Ostwald Process	B. Nickel
3. Catalyst for Contact Process	C.
4. Catalyst for hydrogenation of Ethene	D. Platinum
5. Catalyst to convert water gas to Methanol	E. Finely divided iron.

(h) Define or explain the following terms [5]

(i) Basicity (ii) Weak acid

(iii) Efflorescence (iv) Electrolyte

(v) Amphoteric oxide

Section II

[Answer any four questions]

Question 2.

(a) (i) Name the reactants required to prepare Nitric acid in the laboratory. [5]

(ii) Why is the temperature of the reaction kept below 200°C.

(iii) Why all glass apparatus is used to prepare the acid in the laboratory ?

(iv) Write balanced equation for the reaction.

(b) Lead bromide is electrolysed in [5]

(i) _____ state. The particles present in the electrolyte are (ii) _____ and (iii) _____.

(iv) _____ is liberated at anode and (v) _____ deposited at cathode.

Question 3.

(a) This question refers to the electrolysis of copper sulphate solution with copper electrodes.

(i) Compare the change in mass of the cathode with change in mass of the anode

(ii) Is there any charge in the colour of copper sulphate solution ? Give reason for your answer.

(iii) What is the partical application of this electrolysis ?

(b) Balance and complete the following equations. [5]

(i) $NH_3 + O_2 \xrightarrow{Pt\,800°C}$

(ii) $FeS + HCl \rightarrow$

(iii) $C_{12}H_{22}O_{11} \xrightarrow{Conc\cdot H_2SO_4}$

(iv) $Cu + Conc.\ HNO_3 \rightarrow$

(v) $Ca(HCO_3)_2 + HNO_3 \rightarrow$

Question 4.

(a) Ammonia is manufactured by Haber's process. [5]

(i) Name the reactants and the ratio in which they are required.

(ii) Mention the temperature & pressure to be maintained.

(iii) Give two methods to remove ammonia from the reaction sphere.

(b) Ammonia dissolves in water to furnish (i) _____ and (ii) _____ ions. The basic nature of this solution is due to (iii) _____ ions. The (iv) _____ ion has 3 covalent bonds and one (v) _____ bond.

Question 5.

(a) Aluminium is extracted from Bauxite electrolytically. [7]

(i) What is the chemical formula of Bauxite.

(ii) Write relevant equations to obtain pure alumina from bauxite by Baeyer's process.

(iii) Along with alumina two substances are added for the electrolytic reduction. Name the substances and give reasons for their additions.

(b) Name

(i) The acid which renders [3]

Iron Psssive

(ii) The process of coating thin layer of zinc over the surface of Iron.

(iii) The process of heating of an ore in air.

Question 6.

(a) (i) Calculate the percentage of silver in $Na[Ag(CN)_2]$ [6]

(ii) Iron pyrites when roasted, react according to the following equation

$4FeS_2 + 11\,O_2 \rightarrow 2Fe_2O_3 + 8SO_2$

Calculate

1. The mass of Ferric oxide formed when 240 g of iron pyrites are roasted.
2. How many moles of sulphur dioxide will be liberated at the same time ?
3. What will be the volume of this sulphur dioxide at S.T.P.

(b) Match the following. [4]

Column I	*Column II*
(i) Hydrogen sulphide	A. Rotten eggs smell
(ii) Carbon dioxide	B. Colourless, odourless gas
(iii) Sulphur dioxide	C. Burning Suphur smell
(iv) Hydrogen	D. Colourless odourless gas burns with sound.

Question 7.

(a) Name [4]

(i) The type of reactions alkenes undergo

(ii) 'Self linking property of carbon atoms'

(iii) A solution used to distinguish between Ethene and Ethyne.

(iv) A hydrocarbon which contribute towards greenhouse effect.

(b) Write balanced chemical equation. [4]

(i) Sodium is dropped in ethanol.

(ii) Ethyl chloride reacts with aqueous sodium hydroxide.

(iii) Chlorine is added to ethene.

(iv) Calcium carbide is reacted with water.

(c) Draw the structural formula of [2]

(i) 2-methyl butane (ii) 2-propanol