ICSE EXAMINATION PAPER - 2025
CHEMISTRY
(SCIENCE PAPER – 2)
Class-10th
(Solved)

Maximum Marks: 80 *Time Allotted: Two Hours*

Instructions to Candidates:

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.*
3. *This time is to be spent in reading the question paper.*
4. ***The time given at the head of this Paper is the time allowed for writing the answers.***
5. ***Section A is compulsory**. Attempt **any four** questions from **Section B***
6. *The intended marks for questions or parts of questions are given in brackets [ ].*

SECTION – A (40 Marks)

*(Attempt **all** questions from this Section)*

Question-1 **[15]**

Choose the correct answers to the questions from the given options.

(Do not copy the questions, write the correct answers only.)

(i) Which gas decolourises potassium permanganate ($KMnO_4$) solution?

(a) Sulphur dioxide **(b)** Ammonia
(c) Hydrogen chloride **(d)** Carbon dioxide

(ii) Which formula represents a saturated hydrocarbon?

(a) C_4H_8 **(b)** C_5H_{12}
(c) C_4H_6 **(d)** C_5H_{10}

(iii) The metal whose oxide can be reduced by common reducing agents:

(a) Copper **(b)** Sodium
(c) Aluminium **(d)** Potassium

(iv) An organic compound has a vapour density of 22. The molecular formula of the organic compound is:

[Atomic weight : C = 12, H = 1]

(a) CH_4 **(b)** C_2H_4
(c) C_2H_6 **(d)** C_3H_8

(v) In the reaction given below sulphuric acid acts as a/an:

$$S + 2H_2SO_4 \rightarrow 3SO_2 + 2H_2O$$

(a) Non-volatile acid **(b)** Dibasic acid
(c) Oxidising agent **(d)** Reducing agent

(vi) Assertion (A) : The tendency of losing electrons increases down the Group.

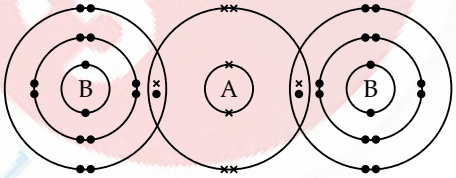
Reason (R) : The most reactive metal is placed at the top of Group 1.

(a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
(b) Both (A) and (R) are true, and (R) is not the correct explanation of (A).
(c) (A) is true but (R) is false.
(d) (A) is false but (R) is true.

(vii) The ore that can be concentrated by using magnetic separation :

(a) Corundum **(b)** Haematite
(c) Calamine **(d)** Bauxite

(viii) The diagram given below shows the bonding in the covalent molecule AB_2.



Which option represents the correct electronic configuration of atoms A and B before combining together to form the above molecule ?

	A	B
(a)	**2, 4**	**2, 8, 6**
(b)	**2, 4**	**2, 8, 7**
(c)	**2, 8**	**2, 8, 8**
(d)	**2, 6**	**2, 8, 7**

(ix) Which of the following option has all the compounds which are members of the same homologous series ?

(a) CH_4, C_2H_6, C_3H_8 **(b)** CH_4, C_2H_6, C_3H_6
(c) C_3H_4, C_3H_6, C_3H_8 **(d)** C_2H_4, C_3H_6, C_4H_{10}

(x) Assertion (A) : In the contact process SO_3 gas is not directly dissolved in water to obtain sulphuric acid.

Reason (R) : Dense fog or misty droplets of sulphuric acid are formed which is difficult to condense.

(a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
(b) Both (A) and (R) are true, and (R) is not the correct explanation of (A).
(c) (A) is true but (R) is false.
(d) (A) is false but (R) is true.

(xi) Given below are four ions:

Cl^-, Li^+, Al^{3+}, K^+

Identify the pair of ions which have the same electronic configuration.

[Atomic nimber : Cl = 17, Li = 3, Al = 13, K = 19]

(a) Cl^- & Li^+ **(b)** Al^{3+} & K^+

(c) Cl^- & K^+ **(d)** Li^+ & K^+

(xii) Which pair of reactants can be best used to produce lead (II) sulphate ?

(a) Sulphuric acid + Lead

(b) Sulphuric acid + Lead hydroxide

(c) Sodium sulphate + Lead nitrate

(d) Potassium sulphate + Lead oxide

(xiii) Aqueous copper (II) sulphate is electrolysed using copper electrodes.

Which statement about the electrolysis is not correct?

(a) An oxidation reaction occurs at the positive electrode.

(b) The current is carried through the electrolyte by ions.

(c) The positive electrode loses mass.

(d) The number of copper (II) ions in the electrolyte decreases.

(xiv) X, Y & Z are three metallic atoms in successive order belonging to the same group such that atomic radii of 'X' is the smallest. Which of the three atoms is the best reducing agent ?

(a) X

(b) Y

(c) Z

(d) All three have the same reducing power.

(xv) 40 cm^3 of methane (CH_4) is reacted with 60 cm^3 of oxygen. The equation for the reaction is given below:

$$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$$

All volume is measured at room temperature.

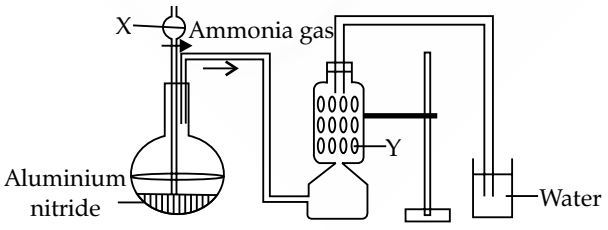
What is the total volume of the gases remaining at the end of the reaction?

(a) 60 cm^3 **(b)** 40 cm^3

(c) 45 cm^3 **(d)** 50 cm^3

Question 2

(i) A student was instructed by the teacher to prepare and collect ammonia gas in the laboratory by using aluminium nitride. The student had set up the apparatus as shown in the diagram below. Study the given diagram and answer the following questions: [5]



(a) Name the substance X added through the thistle funnel by the student.

(b) Write a balanced equation for the reaction occurring between aluminium nitride and substance X.

(c) Identify the substance Y.

(d) State the function of Y.

(e) Why could the student not collect ammonia gas at the end of the experiment?

(ii) State the terms for the following: [5]

(a) Undistilled alcohol containing a large amount of methanol.

(b) A salt formed by the partial replacement of the hydroxyl group of a di-acidic or a tri-acidic base by an acid radical.

(c) Organic compounds having the same molecular formula but different structural formula.

(d) The tendency of an atom to attract the shared pair of electrons towards itself when combined in a compound.

(e) The type of covalent bond in which electrons are shared unequally between the combining atoms.

(iii) Complete the following sentences by choosing the correct word(s) from the brackets: [5]

(a) ..... solution forms a coloured precipitate with ammonium hydroxide which is soluble in excess of ammonium hydroxide.
[Ferrous chloride / Copper nitrate]

(b) Zinc blende is converted to zinc oxide by .....
[Calcination / Roasting]

(c) ..... conducts electricity by the movement of ions.
[Molten iron / molten sodium chloride]

(d) The reaction that takes place at the anode during the electrolysis of aqueous Sodium argentocyanide with silver electrodes is.....
[$Ag \rightarrow Ag^+ + e^-$ / $Ag^+ + e^- \rightarrow Ag$]

(e) The salt formed when ZnO reacts with hot concentrated NaOH is ..... [sodium zincate / zinc hydroxide]

(iv) Match the Column A with Column B: [5]

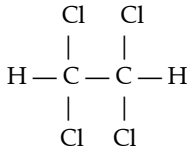
	Column A		Column B
a.	$N_2 + 3H_2 \rightleftarrows 2NH_3$	1.	Vanadium Pentoxide
b.	$4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$	2.	Nickel
c.	$2SO_2 + O_2 \rightleftarrows 2SO_3$	3.	Iron
d.	$C_2H_4 + H_2 \rightarrow C_2H_6$	4.	Concentrated Sulphuric acid
e.	$CuSO_4.5H_2O \rightarrow CuSO_4 + 5H_2O$	5.	Platinum

(v) (a) Draw the structural diagram for the following organic compounds: [5]

1. 2-methyl propene **2.** butanal

(b) Give IUPAC name for the following organic compounds:

1.



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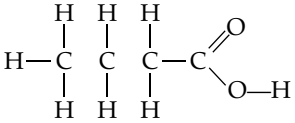

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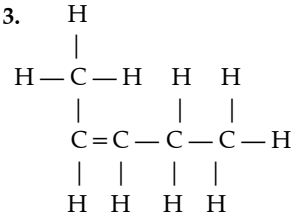


SECTION – B (40 Marks)

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

Question-3

(i) The atomic number of two atoms 'X' and 'Y' are 14 and 8 respectively: [2]

State

(a) the period to which '**X**' belongs.

(b) the formula of the compound formed between '**X**' and '**Y**'.

(Do not identify X and Y)

(ii) Justify the following statements: [2]

(a) Anode is known as the oxidising electrode.

(b) Graphite electrodes are preferred in the electrolysis of molten lead bromide.

(iii) The reaction between concentrated sulphuric acid and magnesium can be represented by the equation given below: [3]

$$Mg + 2H_2SO_4 \rightarrow MgSO_4 + 2H_2O + SO_2$$

If 60 g of magnesium is used in the reaction, calculate the following:

(a) The mass of sulphuric acid needed for the reaction.

(b) The volume of sulphur dioxide gas liberated at S.T.P.

[Atomic weight: Mg=24, H=1, S=32, O=16]

(iv) Give one significant observation when: [3]

(a) a solution of barium chloride is added to zinc sulphate solution.

(b) lead nitrate is heated in a test tube.

(c) chlorine gas is passed over moist starch iodide paper.

Question 4

(i) A gas cylinder can hold 150 g of hydrogen under certain conditions of temperature and pressure. If an identical cylinder with the same capacity can hold 450 g of gas 'G' under the same conditions of temperature and pressure, find: [2]

(a) the vapour density of the gas '**G**'.

(b) the molecular weight of gas '**G**'.

(ii) Complete and balance the following equations: [2]

(a) $CH_3COONa + NaOH \xrightarrow[\Delta]{Cao}$

(b) $CH_3COOH + Mg \rightarrow$

(iii) Name the gas produced during each of the following reactions: [3]

(a) When copper is treated with hot, concentrated nitric acid.

(b) When ammonia is burnt in an atmosphere of oxygen.

(c) When ferrous sulphide reacts with dilute hydrochloric acid.

(iv) Study the table given below. Use only the letters given in the table to answer the questions. Do not identify the elements. [3]

IA	IIA	IIIA	IVA	VA	VIA	VIIA	0
			E		J		Q
	L			G			
	M	D				P	
	N						

(a) State the valency of element '**G**'.

(b) Which element can exhibit catenation?

(c) Write the formula of the compound formed between '**M**' and '**P**'.

Question 5

(i) Given below are two sets of elements from two different periods. [2]

Name the element with the highest ionisation potential in each of the following sets.

(a) Al, Cl, Mg

(b) Ne, O, F

(ii) Ammonia gas is passed over heated copper (II) oxide in a combustion tube: [2]

(a) Name the gas evolved

(b) What will be the colour of the residue that is left in the combustion tube at the end of the reaction?

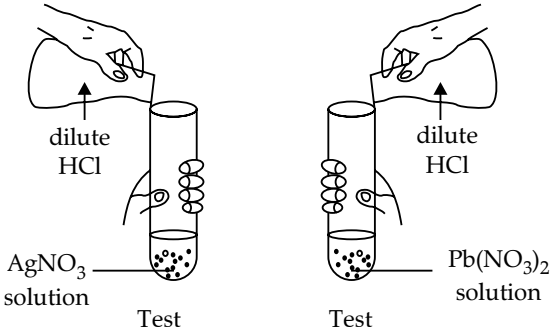
(iii) Give balanced equations for the following: [3]

(a) Action of dilute hydrochloric acid on ammonium carbonate.

(b) Oxidation of sulphur with hot concentrated nitric acid.

(c) Reaction of concentrated sulphuric acid with carbon.

(iv) Rohit took two different salt solutions in test tubes C and D as shown in the figure below. He added dilute HCl to each of the two test tubes. The products formed in the test tubes C and D are silver chloride and lead chloride respectively. **[3]**



State:

(a) One common observation made by Rohit in both the reactions.

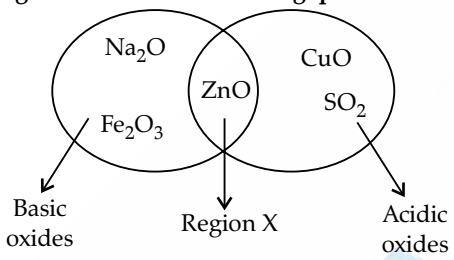
(b) The observations made by him on addition of excess of ammonium hydroxide to the products formed in:

1. test tube **C**

2. test tube **D**

Question 6

(i) Given below is a diagram showing the placement of five different oxides. With respect to the given diagram answer the following questions: **[3]**



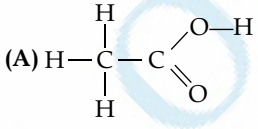
(a) Name the **type** of oxide represented in region X in the diagram.

(b) Identify the oxide which has been **incorrectly** placed in the above diagram.

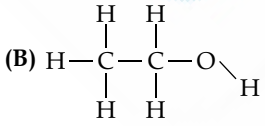
(c) Name the oxide from the above diagram which will form an **alkali** when dissolved in water.

(ii) Given below are organic compounds labelled A to F. Answer the questions that follow: **[3]**

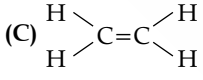
(A)



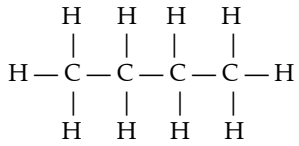
(B)



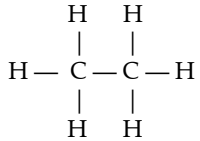
(C)



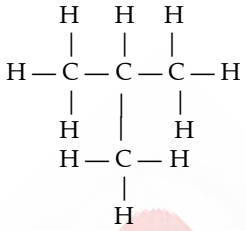
(D)



(E)



(F)



(a) Which compound forms a **single** product with **bromine**?

(b) Which **two** compounds have the **same** molecular formula?

(c) Which **two** compounds will react together in the present of concentrated H_2SO_4 to form a product with a **fruity smell**?

(iii) An organic compound '**X**' contains carbon, oxygen and hydrogen only. The percentage of carbon and hydrogen are 47.4% and 10.5% respectively. The relative molecular mass of '**X**' is 76. Find the **empirical** formula and the **molecular** formula of 'X'.

[Atomic weight: C=12, O=16, H=1] **[4]**

Question 7

(i) Seema added a few pieces of copper turnings to a test tube containing concentrated acid P and she noticed that a reddish-brown gas evolved. **[2]**

(a) Name the acid P used by Seema.

(b) write a balanced chemical equation for the reaction that took place.

(ii) Answer the following questions with reference to the concentration of **bauxite ore**. **[2]**

(a) Name the process used to concentrate the ore.

(b) Give a balanced chemical equation for the conversion of aluminium hydroxide to pure alumina.

(iii) Draw the **dot and cross** structure of the following: **[3]**

(a) An ionic compound formed when Mg reacts with the dilute HCl.

(b) A covalent compound formed when H_2 reacts with Cl_2.

(c) The positive ion produced when ammoia gas is dissolved in water.

[Atomic number: Mg=12, Cl=17, H=1, N=7]

(iv) Acidulated water is electrolysed using platinum electrodes. **[3]**

Answer the following questions:

(a) Why is dilute sulphuric acid added to water?

(b) Write the reaction taking place at the cathode.

(c) What is the observation at the anode?

Question 8

(i) **(a)** State Avogadro's Law.

(b) Define Co-ordinate bond. **[2]**

(ii) Differentiate between the following pairs of compounds using the **reagent** given in the bracket: **[2]**

(a) Ammonium chloride and sodium chloride *(using an alkali)*

(b) Zinc nitrate solution and calcium nitrate solution *(using excess sodium hydroxide solution)*

(iii) You are provided with some compounds in the box.

PbO	**CH_4**	**PbO_2**	**CO_2**
HCl	**NCl_3**	**SO_2**	

[3]

Choose the most appropriate compound which fits the descriptions (a) to (c) given below:

(a) A colourless gas which turns acidified $K_2Cr_2O_7$ from orange to green.

(b) A yellow explosive oily liquid formed when excess chlorine gas reacts with ammonia gas.

(c) A yellow metallic oxide formed on thermal decomposition of $PbCO_3$.

(iv) **P, Q, R** and **S** are the different methods of preparation of salts. **[3]**

P - Simple displacement

Q - Neutralisation by titration

R - Precipitation

S - Direct combination

Choose the **most appropriate** method to prepare the following salts:

(A) $PbCl_2$

(B) $FeCl_3$

(C) Na_2SO_4

❑❑❑

ANSWERS

SECTION – A

Answer-1

(i) Option (a) is correct.

Explanation: Potassium permanganate turns colourless in the presence of a reducing agent. Of all the options given, only SO_2 acts as a reducing agent and hence decolourises it.

(ii) Option (b) is correct.

Explanation: A saturated hydrocarbon has the general formula C_nH_{2n+2}. The formula C_5H_{12} satisfies the criteria and hence, is a saturated compound..

(iii) Option (a) is correct.

Explanation: All the other metals given are reactive metals. Their oxides are very stable and hence, cannot be reduced by any reducing agent.

(iv) Option (d) is correct.

Explanation: If Vapour density = 22, Molecular weight = 2 × VD = 2 × 22 = 44

Molecular weight of C_3H_8 = 3 × 12 + 8x 1

= 36 +8= 44

(v) Option (c) is correct.

Explanation: Concentrated sulphuric acid acts as an oxidising agent and oxidises S to SO_2.

(vi) Option (c) is correct.

Explanation: The reason is incorrect as the most reactive metal of Group I is placed lowest in the group. The tendency to lose electrons increases down the Group.

(vii) Option (b) is correct.

Explanation: Haematite is an ore of Iron and is magnetic. Hence, it is concentrated by using magnetic separation methods.

(viii) Option (d) is correct.

Explanation: A = 2, 6 and has 6 valence electrons

B = 2, 7 and has 7 valence electrons. A is devoid of two electrons and B is devoid of 1 electron. So by sharing they both complete their octetand form AB_2.

(ix) Option (a) is correct.

Explanation: Homologous series have their members following a general formula. In (a) the formula is C_nH_{2n+2}, which all given compounds follow. In other options, members do not follow a general formula.

(x) Option (a) is correct.

Explanation: SO_3 with water forms toxic fumes of misty droplets of sulphuric acid that are difficult to condense.

(xi) Option (c) is correct.

Explanation: Cl^- and K^+ are isoelectronic having same number of electrons = 18

(xii) Option (c) is correct.

Explanation: Lead sulphate is an insoluble compound and can be best prepared by precipitation reaction. The reagents are two soluble salt solutions of: sodium sulphate + lead nitrate

(xiii) Option (d) is correct.

Explanation: The copper ions deposited at the cathode from the electrolyte are replenished by the copper ions formed at the anode according to the reaction:

$Cu - 2e \rightarrow Cu^{2+}$

Hence, the number of copper ions in the electrolyte do not decrease.

(xiv) Option (c) is correct.

Explanation: Z is placed lowest in the Group and has the biggest atomic radius. It can give up electrons most easily and acts as the strongest reducing agent.

(xv) Option (b) is correct.

Explanation: 1 vol O_2 = 30 mL, 2 vols O_2 = 60 mL

1 vol CH_4 reacts with 2 vols of O_2 to form 1 vol CO_2

30 mL of CH_4 reacts with 60 mL O_2 to form 30 mL CO_2

Given 40 mL of CH_4, hence 10 mL of CH_4 remains unused.

Total volume of gas remaining = 30 mL CO_2 + 10 mL CH_4 = 40 mL

Answer-2

(i) (a) X=warm water

(b) $AlN + 3H_2O \rightarrow Al(OH)_3 + NH_3$

(c) Y= Calcium oxide

(d) It acts as the drying agent for ammonia gas

(e) NH_3 is highly soluble in water and cannot be collected by the given procedure.

(ii) (a) spurious alcohol

OR

denatured alcohol.

(b) basic salt

(c) isomers

(d) electronegativity

(e) polar covalent bond

(iii) (a) copper nitrate

(b) roasting

(c) molten sodium chloride

(d) $Ag \rightarrow Ag^+ + e^-$

(e) sodium zincate

(iv) (a) 3.

Explanation: This is Haber Bosch process where Fe is used as a catalyst.

(b) 5.

Explanation: Platinum catalyst is used in oxidation of ammonia.

(c) 1.

Explanation: Contact process uses vanadium pentoxide as catalyst.

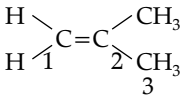
(d) 2.

Explanation: In hydrgenation of alkenes (C_2H_4), nickle is used as a catalyst.

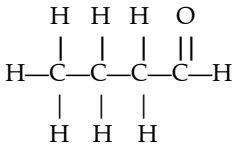
(e) 4.

Explanation: Dehydration reaction does not require catalyst. Only in some cases sulphuric acid is used.

(v) (a) 1. 2-methyl propene:



2. Butanal:



(b) 1. 1,1,2,2-tetrachloroethane

2. Butanoic acid

3. Pent-2-ene

SECTION – B

Answer-3.

(i) X[14] = 2,8,4 Y[8] = 2,6

(a) X belongs to period 3

(b) XY_2

(ii) (a) As oxidation or loss of electrons occur at the anode, it is known as the oxidising electrode.

(b) Graphite is unaffected by the reactive bromine vapours released at the anode during electrolysis of molten lead bromide. Graphite electrodes are thus preferred during the electrolysis of molten lead bromide.

(iii) (a) 1 mole of Mg reacts with 2 moles of H_2SO_4

Atomic weight of Mg = 24, Molecular weight of H_2SO_4 = 98

24 g of Mg reacts with 2 × 98 g of H_2SO_4

60 g of Mg reacts with $= 2 \times 98 \times \frac{60}{24}$

$= 490$ g of H_2SO_4

(b) 1 mole of Mg liberates 1 mole of SO_2 at S.T.P

24 gms of Mg liberate 22.4 litres of SO_2 at S.T.P.

60 gms of SO_2 liberate $= 22.4 \times \frac{60}{24}$

$= 56$ litres of SO_2

(iv) (a) Thick white precipitate of barium sulphate is formed.

(b) Reddish brown fumes evolves

(c) The moist starch iodide paper becomes blue black.

Answer-4

(i) (a) vapour density = mass of n molecules of gas / mass of n molecules of hydrogen gas

Since, the gases having same volume are at the same conditions of pressure and temperature, both contain same number of molecules:

Mass of gas containing n molecules = 450 g

Mass of H_2 containing n molecules = 150 g

$V.D = \frac{450}{150} = 3$

(b) Molecular weight of the gas = 2 × V.D = 2 × 3 = 6

(ii) (a) $CH_3COONa + NaOH \xrightarrow[\Delta]{CaO} \underset{\text{Methane}}{CH_4} + Na_2CO_3$

(b) $2CH_3COOH + Mg \rightarrow (CH_3COO)_2 Mg + H_2\uparrow$

(iii) (a) Nitrogen dioxide

(b) Nitrogen .

In presence of catalyst nitric oxide gas (NO) is produced.

(c) Hydrogen sulphide

(iv) (a) The valency of G= 3

(b) The element that exhibits catenation is E

(c) The formula of the compound is MP_2

Answer 5.

(i) (a) Chlorine, as it belongs to Group 17 and is the most electronegative element of all

(b) Ne, as it is an inert gas and has a stable electronic configuration

(ii) (a) The gas evolved is Nitrogen

(b) Reddish brown/reddish pink colour of CuO

(iii) (a) $(NH_4)_2CO_3 + 2HCl \rightarrow 2NH_4Cl + H_2O + CO_2$

(b) $S + 6HNO_3 \rightarrow H_2SO_4 + 6NO_2 + 2H_2O$

(c) $C + 2H_2SO_4 \rightarrow CO_2 + 2SO_2 + 2H_2O$

(iv) (a) Both the test tubes showed formation of white precipitates.

(b) 1. In test tube C, the white precipitate dissolved.

2. In test tube D the white precipitate did not dissolve.

Answer-6

(i) (a) Amphoteric oxide

(b) CuO- as it is not an acidic oxide, but is a basic oxide.

(b) CuO- as it is not an acidic oxide, but is a basic oxide.

(c) Na_2O- it dissolves in water to form an alkali NaOH.

(ii) (a) Compound C -as 1,2-dibromoethane is formed as the only product.

(b) Compounds D and F have same molecular formula= C_4H_{10} and are isomers

(c) Compounds A and B react together in the presence of concentrated sulphuric acid to form fruity odour ester.

(iii)

	C	H	O
Percentage	47.4	10.5	42.1 [100 – (47.4 + 10.5)]
Relative no. of moles	47.4/12	10.5/1	42.1/16
	3.95	10.5	2.63
Simplest ratio	1.5	3.99	1
	1.5 × 2 = 3	4 × 2 = 8	1×2=2

Empirical formula= $C_3H_8O_2$

Empirical weight= $3 \times 12 + 8 \times 1 + 2 \times 16 = 76$

Molecular mass given = 76

Empirical weight × n = Molecular weight

$76 \times n = 76,\ n = 1$

Empirical formula = Molecular formula = $C_3H_8O_2$

Answer-7.

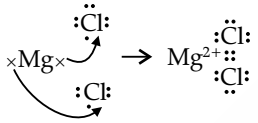
(i) (a) the acid used is concentrated nitric acid

(b) $Cu + 4HNO_3 \rightarrow Cu(NO_3)_2 + 2NO_2 + 2H_2O$.

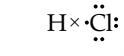
(ii) (a) In the extraction of aluminium, bauxite is concentrated during the Bayer's process.

(b) $Al(OH)_3 + NaOH \rightarrow NaAlO_2 + 2H_2O$

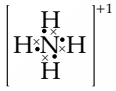
(iii) (a) $MgCl_2$-Ionic bond



(b) HCl- polar covalent bond



(c) NH_4^+



(iv) (a) Water is a bad conductor of electricity. To make it conducting, small amount of acid is added.

(b) $2H^+ + 2e \rightarrow H_2$

(c) Bubbles of colourless gas oxygen evolves at the anode.

Answer-8.

(i) (a) Avogadro's law states that under the same conditions of temperature and pressure, equal volumes of different gases contain an equal number of molecules.

(b) Coordinate bond is a special type of covalent bond in which both electrons or an electron pair that is shared between two atoms comes from the same atom.

(ii) (a) NH_4Cl reacts with an alkali to liberate pungent odour ammonia gas, while this does not happen with NaCl.

(b) When excess of sodium hydroxide is added to zinc nitrate solution, the gelatinous white precipitate of zinc hydroxide dissolves forming a clear solution. Calcium nitrate forms white precipitate of calcium hydroxide that does not dissolve in excess sodium hydroxide solution.

(iii) (a) SO_2, since it acts as a reducing agent.

(b) NCl_3

(c) PbO

(iv) (a) R-Precipitation

$2NaCl + Pb(NO_3)_2 \rightarrow PbCl_2 + 2Na(NO_3)$

(b) S-Direct combination

$2Fe + 3Cl_2 \rightarrow 2FeCl_3$

(c) Q- Neutralisation by titration

$2NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$

❑❑❑