SECTION - I (40 Marks)

Attempt all questions from this Section

Question 1

(a) Choose the correct answer from the options given below:

(i) The salt solution which does not react with ammonium hydroxide is:
   (A) Calcium Nitrate  (B) Zinc Nitrate  (C) Lead Nitrate  (D) Copper Nitrate

   Ans. (D) Copper Nitrate

   Topic: Acid, base and salt Subtopic: Salt Level: Easy Std. X ICSE Board / Chemistry

(ii) The organic compound which undergoes substitution reaction is:
   (A) C₂H₂  (B) C₂H₄  (C) C₁₀H₁₈  (D) C₂H₆

   Ans. (D) C₂H₆ - ethane is saturated hydrocarbon which undergoes substitution reaction.

   Topic: Organic chemistry Subtopic: Hydrocarbon Level: Easy Std. X ICSE Board / Chemistry

(iii) The electrolysis of acidified water is an example of:
   (A) Reduction  (B) Oxidation  (C) Redox reaction  (D) Synthesis

   Ans. (C) Redox reaction, as water undergoes oxidation and reduction at anode and cathode respectively.

   Topic: Electrochemistry Subtopic: Electrolysis Level: Easy Std. X ICSE Board / Chemistry

(iv) The IUPAC name of dimethyl ether is:
   (A) Ethoxy methane  (B) Methoxy methane  (C) Methoxy ethane  (D) Ethoxy ethane

   Ans. (B) CH₃ – O – CH₃ (Methoxy methane)

   Topic: Organic chemistry Subtopic: Nomenclature Level: Easy Std. X ICSE Board / Chemistry
(v) The catalyst used in the contact process is:

(A) Copper  (B) Iron

(C) Vanadium pentoxide  (D) Manganese dioxide

Ans. (C)

$V_2O_5$ is used in contact process.

**Topic:** Acid, base and salt  
**Subtopic:** Acid  
**Level:** Easy  
**Std. X**  
**ICSE Board / Chemistry**

(b) Give one word or a phase for the following statements:

(i) The energy released when an electron is added to a neutral gaseous isolated atom to form a negatively charged iron.

Ans. Electron affinity or electron gain enthalpy.

**Topic:** Periodic table  
**Subtopic:** Property  
**Level:** Easy  
**Std. X**  
**ICSE Board / Chemistry**

(ii) Process of formation of ions from molecules which are not in ionic state.

Ans. Ionization

**Topic:** Periodic table  
**Subtopic:** Property  
**Level:** Easy  
**Std. X**  
**ICSE Board / Chemistry**

(iii) The tendency of an element to form chains of identical atoms.

Ans. Catenation - It’s a self-linking.

Property of atoms like carbon to give long chains of carbon.

**Topic:** Organic chemistry  
**Subtopic:** Property  
**Level:** Easy  
**Std. X**  
**ICSE Board / Chemistry**

(iv) The property by which certain hydrated salts, when left exposed to atmosphere, lose their water of crystallization and crumble into powder.

Ans. Dehydration

**Topic:** Acid, base and salt  
**Subtopic:** Salt  
**Level:** Easy  
**Std. X**  
**ICSE Board / Chemistry**

(v) The process by which sulphide ore is concentrated.

Ans. Froth floatation

**Topic:** Metal & non-metal  
**Subtopic:** Extraction of metal  
**Level:** Easy  
**Std. X**  
**ICSE Board / Chemistry**

(c) Write a balanced chemical equation for each of the following:

(i) Action of concentrated sulphuric acid on carbon.

Ans. $C_{(s)} + H_2SO_4 \xrightarrow{conc.} CO_2 + 2SO_2 + 2H_2O$

**Topic:** Acid, base and salt  
**Subtopic:** Acid  
**Level:** Medium  
**Std. X**  
**ICSE Board / Chemistry**
(ii) Reaction of sodium hydroxide solution with iron (III) chloride solution.

Ans. \[FeCl_3(aq) + 3NaOH(aq) \rightarrow Fe(OH)_3(s) + 3NaCl(aq)\]

**Topic:** Acid, base and salt **Subtopic:** Base **Level:** Medium **Std. X** / ICSE Board / Chemistry

(iii) Action of heat on aluminium hydroxide.

Ans. \[2Al(OH)_3 \rightarrow Al_2O_3 + 3H_2O\]

**Topic:** Metal & Non-metal **Subtopic:** Extraction of metal **Level:** Tough **Std. X** / ICSE Board / Chemistry

(iv) Reaction of zinc with potassium hydroxide solution.

Ans. \[Zn + 2KOH + 2H_2O \rightarrow K_2[Zn(OH)_4] + H_2\]

**Topic:** Metal & Non-metal **Subtopic:** Reaction of metal **Level:** Tough **Std. X** / ICSE Board / Chemistry

(v) Action of dilute hydrochloric acid on magnesium sulphite.

Ans. \[MgSO_3 + 2HCl \rightarrow MgCl_2 + H_2O + SO_2\]

**Topic:** Acid, base and salt **Subtopic:** Salt **Level:** Tough **Std. X** / ICSE Board / Chemistry

(d) (i) Give the IUPAC name for each of the following:

1. \[\text{H} - \text{C} = \text{O} \]
   \[
   \text{H} \]

   \[
   \text{H} \quad \text{H} \quad \text{H}
   \]

2. \[\text{H} - \text{C} - \text{C} - \text{C} - \text{OH} \]
   \[
   \text{H} \quad \text{H} \quad \text{H}
   \]

3. \[\text{H}_3\text{C} - \text{C} = \text{C} - \text{CH}_3\]

(ii) Write the structural formula of the two isomers of butane.

Ans. (i) IUPAC Names:

1. Methanol
2. Propanol
3. But-2-ene

(ii) \[\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3\] (n-butane)

\[\text{CH}_3\]

\[\text{CH} - \text{CH}_3\] (iso-butane)

**Topic:** Organic chemistry **Subtopic:** Nomenclature & Isomer **Level:** Medium **Std. X** / ICSE Board / Chemistry
(e) State one relevant observation for each of the following:

(i) Lead nitrate solution is treated with sodium hydroxide solution drop wise till it is excess.
Ans. ppt. of lead hydroxide is observed

\[
Pb(NO_3)_2 + 2NH_4OH \rightarrow Pb(OH)_2 + 2NH_4NO_3
\]

**Topic:** Analytical chemistry _Subtopic:_ Cation detection _Level:_ Tough _Std._ X _ICSE Board / Chemistry

(ii) At the anode, when molten lead bromide is electrolyzed using graphite electrodes.
Ans. Brown fumes of bromine gas are observed at anode.

**Topic:** Electrochemistry _Subtopic:_ Electrolysis _Level:_ Medium _Std._ X _ICSE Board / Chemistry

(iii) Lead nitrate solution is mixed with dilute hydrochloric acid and heated.
Ans. White ppt. of \( \text{PbCl}_2 \) is formed.

**Topic:** Analytical chemistry _Subtopic:_ Cation detection _Level:_ Tough _Std._ X _ICSE Board / Chemistry

(iv) Anhydrous calcium chloride is exposed to air for some time.
Ans. Anhydrous \( \text{CaCl}_2 \) on exposure to atmosphere form solution.

**Topic:** Acid, base and salt _Subtopic:_ Salt _Level:_ Medium _Std._ X _ICSE Board / Chemistry

(v) Barium chloride solution is slowly added to sodium sulphate solution.
Ans. White ppt. of barium sulphate is formed solution turns turbid.

**Topic:** Acid, base and salt _Subtopic:_ Salt _Level:_ Easy _Std._ X _ICSE Board / Chemistry

(f) Give a reason for each of the following:

(i) Ionic compounds have a high melting point.
Ans. Ionic compounds have alternatively arranged cations and anions to give closely packed structure and balanced forces. A lot of energy is needed to break strong ionic bonds therefore ionic compounds are high melting.

**Topic:** Chemical bonding _Subtopic:_ Ionic bonding _Level:_ Easy _Std._ X _ICSE Board / Chemistry

(ii) Inert gases do not form ions.
Ans. Inert gases have stable completely filled orbitals hence they do not loose or gain electron to form ions.

**Topic:** Chemical bonding _Subtopic:_ Property _Level:_ Easy _Std._ X _ICSE Board / Chemistry

(iii) Ionisation potential increases across a period, from left to right.
Ans. From left to right in periodic table, atomic size decreases smaller the size more the effective nuclear charge. Therefore more energy is required to remove an electron from atom therefore ionization potential increases.

**Topic:** Periodic table _Subtopic:_ Ionisation potential _Level:_ Easy _Std._ X _ICSE Board / Chemistry
(iv) Alkali metals are good reducing agents.

Ans. Alkali metals have large size and single electron in valence shell. This e\textsuperscript{-} can be easily lost therefore alkali metals are good reducing agents (e\textsuperscript{-} donors)

**Topic:** Periodic table Subtopic: Property Level: Medium Std. X ICSE Board / Chemistry

(v) Conductivity of dilute hydrochloric acid is greater than that of acetic acid.

Ans. Acetic acid is weak electrolyte which dissociated partially where as HCl is strong electrolyte which dissociate completely therefore HCl is better conductor compared to CH\textsubscript{3}COOH.

**Topic:** Acid, base and salt Subtopic: Acid Level: Easy Std. X ICSE Board / Chemistry

(g) Name the gas that is produced in each of the following cases:

(i) Sulphur is oxidized by concentrated nitric acid.

(ii) Action of dilute hydrochloride acid on sodium sulphide.

(iii) Action of cold and dilute nitric acid on copper.

(iv) At the anode during the electrolysis of acidified water.

(v) Reaction of ethanol and sodium.

Ans.

(i) SO\textsubscript{2}

(ii) H\textsubscript{2}S

(iii) NO\textsubscript{2}

**Topic:** Analytical chemistry Subtopic: Detection of gas Level: Easy Std. X ICSE Board / Chemistry

(iv) O\textsubscript{2}

**Topic:** Electrochemistry Subtopic: Electrolysis Level: Easy Std. X ICSE Board / Chemistry

(v) H\textsubscript{2}

**Topic:** Metal & Non-metal Subtopic: Properties Level: Easy Std. X ICSE Board / Chemistry

(h) Fill up the blanks with the correct choice given in brackets.

(i) Ionic or electrovalent compounds do not conduct electricity in their _______ state. (fused/solid)

Ans. Solid

**Topic:** Chemical bonding Subtopic: Property Level: Easy Std. X ICSE Board / Chemistry

(ii) Electrolysis of aqueous sodium chloride solution will form _______ at the cathode.

(Hydrogen gas / Sodium metal)

Ans. Hydrogen gas

**Topic:** Electrochemistry Subtopic: Electrolysis Level: Easy Std. X ICSE Board / Chemistry
(iii) Dry hydrogen chloride gas can be collected by ________ displacement of air. (downward / upward)

Ans. Downward

**Topic:** Metal & Non-metal **Subtopic:** Preparation of hydrogen _Level:_ Easy _Std. X_ ICSE Board / Chemistry

(iv) The most common ore of iron is _______. (Calcium / Haematite)

Ans. Haematite

**Topic:** Metal & Non-metal **Subtopic:** Ore _Level:_ Easy _Std. X_ ICSE Board / Chemistry

(v) The salt prepared by the method of direct combination is _______.

(iron (II) chloride / iron (III) chloride)

Ans. Iron (III) chloride

**Topic:** Acid, base and salt **Subtopic:** Salt _Level:_ Difficult _Std. X_ ICSE Board / Chemistry

SECTION - II (40 Marks)

Attempt any four questions from this Section

**Question 2**

(a) (i) What do you understand by a lone pair of electrons?

(ii) Draw the electron dot diagram of Hydronium ion (H = 1; O = 8)

Ans. (i) Lone pair of electrons are those valence electrons which do not take part in bonding and remain nonbonded.

(ii) Hydronium ion \( [H_3O^+] \)

\[
\begin{array}{c}
\text{H} \\
\text{H} \\
\text{O} \\
\text{H} \\
\end{array} \rightarrow \text{H}^+
\]

**Topic:** Chemical bonding **Subtopic:** Lewis theory _Level:_ Easy _Std. X_ ICSE Board / Chemistry

(b) In Period 3 of the Periodic Table, element B is placed to the left of element A.

On the basis of this information, choose the correct word from the brackets to complete the following statements:

(i) The element B would have (lower / higher) metallic character than A.

(ii) The element A would probably have (lesser / higher) electron affinity than B.

(iii) The element A would have (greater / smaller) atomic size than B.
Ans. Periodic table
   (i) Higher - Metallic character decreases from left to right.
   (ii) Higher - Electron affinity increases from left to right.
   (iii) Smaller - Atomic size decreases from left to right.

Topic: Periodic table_Subtopic: Property_ Level: EasyStd. X_ICSE Board / Chemistry

(c) Copy and complete the following table which refers to the conversion of ions to neutral particles.

<table>
<thead>
<tr>
<th>Conversion</th>
<th>Ionic equation</th>
<th>Oxidation / Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloride ion to chlorine molecule</td>
<td>(i) _______</td>
<td>(ii) _______</td>
</tr>
<tr>
<td>Lead (II) ion to lead</td>
<td>(iii) _______</td>
<td>(iv) _______</td>
</tr>
</tbody>
</table>

Ans.

<table>
<thead>
<tr>
<th>Conversion</th>
<th>Ionic equation</th>
<th>Oxidation / Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloride ion to chlorine molecule</td>
<td>(i) $2Cl^- \rightarrow Cl_2 + 2e^-$</td>
<td>(ii) Oxidation</td>
</tr>
<tr>
<td>Lead (II) ion to lead</td>
<td>(iii) $Pb^{2+} + 2e^- \rightarrow Pb$</td>
<td>(iv) Reduction</td>
</tr>
</tbody>
</table>

Topic: Electrochemistry_Subtopic: Reaction_ Level: EasyStd. X_ICSE Board / Chemistry

Question 3

(a) (i) Write the balanced chemical equation to prepare ammonia gas in the laboratory by using an alkali.
   (ii) State why concentrated sulphuric acid is not used for drying ammonia gas.
   (iii) Why is ammonia gas not collected over water?

Ans. (i) $Ca(OH)_2 + 2NH_4Cl \rightarrow CaCl_2 + 2H_2O + 3NH_3 \uparrow$
   (ii) As ammonia gas is basic in nature it forms ammonium sulphate salt.
   (iii) Ammonia gas is highly soluble in water. Therefore it is not collected over water.

Topic: Metal & Non-metal_Subtopic: Preparation of ammonia_Level: EasyStd. X_ICSE Board / Chemistry

(b) (i) Name the acid used for the preparation of hydrogen chloride gas in the laboratory. Why is this particular acid preferred to other acids?
   (ii) Write the balanced chemical equation for the laboratory preparation of hydrogen chloride gas.

Ans. (i) $H_2SO_4$ (Sulphuric acid is used for preparation of $HCl$ gas in laboratory). $H_2SO_4$ has dehydrating properties so act as dehydrating agent.
   (ii) $H_2SO_4_{(aq)} + NaCl_{(s)} \rightarrow NaHSO_4 + HCl_{(g)}$
(c) For the preparation of hydrochloric acid in the laboratory:
  (i) Why is direct absorption of hydrogen chloride gas in water not feasible?
  (ii) What arrangement is done to dissolve hydrogen chloride gas in water?

  Ans. (i) The reaction is highly exothermic.
  (ii) As the reaction is exothermic, the installation is called HCl over or burner. The HCl gas is absorbed in deionized water resulting in chemically pure HCl.

  **Topic:** Acid, base and salt
  **Subtopic:** Acid
  **Level:** Medium
  **Std. X**
  **ICSE Board / Chemistry**

(d) For the electro-refining of copper:
  (i) What is the cathode made up of?
  (ii) Write the reaction that takes place at the anode.

  Ans. (i) Pure copper metal
  (ii) Reaction at anode -

  **Oxidation reaction:** \( Cu \longrightarrow Cu^{2+} + 2e^- \)

  **Topic:** Metal & Non-metal
  **Subtopic:** Refining of metal
  **Level:** Easy
  **Std. X**
  **ICSE Board / Chemistry**

**Question 4**

(a) The percentage composition of a gas is:
   Nitrogen 82.35%, Hydrogen 17.64%.

   Find the empirical formula of the gas.  \([N = 14, \ H = 1]\)

   Ans. No. of mole of nitrogen \(= \frac{82.35}{14} = 5.88 \)
   No. of mole of Hydrogen \(= \frac{17.64}{1} = 17.64 \)
   The ratio of their mole is 5.88:17.64
   \(1 : 3\)

   So the empirical formula is \(NH_3\)

  **Topic:** Mole concept
  **Subtopic:** Empirical formula
  **Level:** Easy
  **Std. X**
  **ICSE Board / Chemistry**

(b) Aluminum carbide reacts with water according to the following equation:

\[ Al_4C_3 + 12H_2O \rightarrow 4Al(OH)_3 + 3CH_4 \]

  (i) What mass of aluminum hydroxide is formed from 12g of aluminum carbide?
  (ii) What volume of methane at s.t.p. is obtained from 12g of aluminum carbide?

  \([\text{Relatively molecular weight of } Al_4Cl_3 = 144; Al(OH)_3 = 78]\)
Ans. (i) \( \text{Al}_4\text{C}_3 + 12\text{H}_2\text{O} \rightarrow 4\text{Al(OH)}_3 + 3\text{CH}_4 \)

So, the amount of \( \text{Al(OH)}_3 \) formed will be 26 gm

(ii) From 12 gm \( \text{Al}_4\text{C}_3 \) 5600 cc methane will be formed.

**Topic:** Mole concept _Subtopic:_ Numerical _Level:_ Easy _Std. X__ ICSE Board / Chemistry

(c) (i) If 150 cc of gas A contains \( X \) molecules, how many molecules of gas B will be present in 75 cc of B?

The gases A and B are under the same conditions of temperature and pressure.

(ii) Name the law on which the above problem is based.

Ans. (i) According to Avogadros law equal volume of gases contain equal no. of molecule of same temperature and pressure.

So, 150 cc B will also contain \( X \) molecule, and 75 cc will contain \( X/2 \) molecule.

(ii) Avogadro’s law

**Topic:** Mole concept _Subtopic:_ Avogadro’s law _Level:_ Easy _Std. X__ ICSE Board / Chemistry

(d) Name the main component of the following alloys:

(i) Brass

(ii) Duralumin

Ans. Brass → Copper and Zinc

Duralumin → Copper, Manganese and Magnesium

**Topic:** Metal & Non-metal _Subtopic:_ Alloy _Level:_ Easy _Std. X__ ICSE Board / Chemistry

**Question 5**

(a) Complete the following table which relates to the homologous series of hydrocarbons.

<table>
<thead>
<tr>
<th>General Formula</th>
<th>IUPAC name of the homologous series</th>
<th>Characteristic bond type</th>
<th>IUPAC name of the first member of the series</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{C}<em>n\text{H}</em>{2n-2} )</td>
<td>(A) Alkyne</td>
<td>(B) (-\text{C} \equiv \text{C}-)</td>
<td>(C) Ethyne</td>
</tr>
<tr>
<td>( \text{C}<em>n\text{H}</em>{2n+2} )</td>
<td>(D) Alkane</td>
<td>(E) (-\text{C} - \text{C}-)</td>
<td>(F) Methane</td>
</tr>
</tbody>
</table>

Ans. (A) Alkyne (B) \(-\text{C} \equiv \text{C}-\) (C) Ethyne

(D) Alkane (E) \(-\text{C} - \text{C}-\) (F) Methane

**Topic:** Organic chemistry _Subtopic:_ Hydrocarbons _Level:_ Easy _Std. X__ ICSE Board / Chemistry
(b) (i) Name the most common ore of the metal aluminum from which the metal is extracted. Write the chemical formula of the ore.

(ii) Name the process by which impure ore of aluminum gets purified by using concentrated solution of an alkali.

(iii) Write the equation for the formation of aluminum at the cathode during the electrolysis of alumina.

Ans. (i) The most common ore of Al is boxite. Chemical formula is \( \text{Al}_2\text{O}_3 \).

(ii) The process is called Bayer process.

(iii) \[ \text{Al}_2\text{O}_3 \rightarrow 2\text{Al}^{3+} + 3\text{O}^{2-} \]

Reaction of cathode: \( 2\text{Al}^{3+} + 6e \rightarrow 2\text{Al} \)

Question 6

(a) A compound X (having vinegar like smell) when treated with ethanol in the presence of the acid Z, gives a compound Y which has a fruity smell.

The reaction is:

\[ \text{C}_2\text{H}_5\text{OH} + X \rightarrow Y + \text{H}_2\text{O} \]

(i) Identify Y and Z.

(ii) Write the structural formula of X.

(iii) Name the above reaction.

Ans. (i) Y is ester \( \text{CH}_3\text{COOC}_2\text{H}_5 \) (Ethyl ethanoate)

Z is concentrated \( \text{H}_2\text{SO}_4 \)

(ii) X is \( \text{CH}_3\text{COOH} \)

(iii) Esterification reaction

(b) Ethane burns in oxygen to form \( \text{CO}_2 \) and \( \text{H}_2\text{O} \) according to the equation:

\[ 2\text{C}_2\text{H}_6 + 7\text{O}_2 \rightarrow 4\text{CO}_2 + 6\text{H}_2\text{O} \]

If 1250 cc of oxygen is burnt with 300 cc of ethane. Calculate:

(i) the volume of \( \text{CO}_2 \) formed.

(ii) the volume of unused \( \text{O}_2 \)
Ans.

$$2C_2H_6 + 7O_2 \rightarrow 4CO_2 + 6H_2O$$

So, ethane is limiting reagent.

(i) $2 \times 22400 \text{ cc ethane gives } \rightarrow 4 \times 22400 \text{ cc } CO_2$

\[ \therefore 300 \text{ cc ethane gives } \frac{4 \times 22400 \times 300}{2 \times 22400} \text{ cc } CO_2 \]

\[= 600 \text{ cc } CO_2 \]

(ii) For 300 cc Ethane 1050 cc of $O_2$ will be required.

So, unused $O_2$ is $(1250 – 1050) = 200$ cc

**Topic:** Mole concept _Subtopic:_ Numerical _Level:_ Easy _Std. X__ ICSE Board / Chemistry

(c) Three solutions P, Q and R have pH value of 3.5, 5.2 and 12.2 respectively. Which one of these is a:

(i) Weak acid?

(ii) Strong alkali?

Ans.

(i) Q having pH 5.2 is weak acid

(ii) R having pH 12.2 is strong alkali.

**Topic:** Acid, base and salt _Subtopic:_ Acid _Level:_ Easy _Std. X__ ICSE Board / Chemistry

Question 7

(a) Give a chemical test to distinguish between the following pairs of chemicals:

(i) Lead nitrate solution and Zinc nitrate solution

(ii) Sodium chloride solution and Sodium nitrate solution

Ans.

(i) Lead nitrate and Zinc nitrate solution can be distinguished by passing $H_2S$ in solution.

$$Pb(NO_3)_2 \text{ will give black precipitate of } PbS \text{ whereas } Zn(NO_3)_2 \text{ will not.}$$

$$Pb^{2+} + H_2S \rightarrow PbS \downarrow + 2H^+$$

(ii) $NaCl$ and $NaNO_3$ solution can be distinguished simply by addition of $AgNO_3$ solution into it $NaCl$ solution will give white precipitate of $AgCl$ whereas $NaNO_3$ will not.

$$NaCl + AgNO_3 \rightarrow AgCl \downarrow + NaNO_3$$

**Topic:** Analytical chemistry _Subtopic:_ Qualitative analysis _Level:_ Medium _Std. X__ ICSE Board / Chemistry
(b) Write a balanced equation for the preparation of each of the following salts:

(i) Copper sulphate from Copper carbonate.

(ii) Zinc carbonate from Zinc sulphate.

Ans. (i) \(3CuCO_3 + 2H_2SO_4 \rightarrow CuSO_4 + CO_2 + H_2O\)

(ii) \(ZnSO_4 + Na_2CO_3 \rightarrow Na_2SO_4 + ZnCO_3\)

(c) (i) What is the type of salt formed when the reactants are heated at a suitable temperature for the preparation of Nitric acid?

(ii) State why for the preparation of Nitric acid, the complete apparatus is made up of glass.

Ans. (i) Sodium or potassium nitrate on reaction with \(H_2SO_4\) can produce nitric acid in that case sulphate salt will be prepared.

\(2NaNO_3 + H_2SO_4 \rightarrow 2HNO_3 + Na_2SO_4\)

(ii) Because nitric acid will not react with glass.

(d) Which property of sulphuric acid is shown by the reaction of concentrated sulphuric acid with:

(i) Ethanol?

(ii) Carbon?

Ans. (i) Sulphuric acid acts as a dehydrating agent while reaction with ethanol.

(ii) With carbon it will act as oxidizing reagent.