# SECOND TERM EXAMINATION 2025-2026
## STANDARD - X
## SUBJECT - CHEMISTRY

**TIME: 2 HRS.** F.M:80

## SECTION – A (40 MARKS)

**(Attempt all the Questions From This Section)**

**Q1. Multiple Choice questions.** (1X15 = 15)

1) **Aqueous solution of cupric chloride forms a deep blue solution on addition of**
   a. Drop wise sodium hydroxide
   b. Excess sodium hydroxide
   c. Drop wise ammonium hydroxide
   d. Excess ammonium hydroxide

2) **Which statement about conduction of electricity is correct?**
   a. Electricity is conducted in aqueous solution by electrons.
   b. Electricity is conducted in a metal wire by ions.
   c. Electricity is conducted in molten electrolyte by electrons.
   d. Electricity is conducted in an acid solution by ions.

3) **The main component of brass are**
   a. Copper and Zinc  b. Copper and Lead
   c. Copper and Tin  d. Copper and Iron

4) **In the industrial preparation of Nitric acid at what temperature platinum gauze is kept**
   a. 800°C  b. 700°C
   c. 950°C  d. 750°C

5) **The IUPAC name of formic acid is**
   a. Prapanoic acid  b. Methanoic acid
   c. Ethanoic acid  d. Butanoic acid

6) **Assertion (A). Zinc Oxide is amphoteric Oxide**
   **Reason (R) : Zinc oxide can react with both acids and bases.**

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

7) **The inert electrode used in the electrolysis of acidified water is**
a. Nickel b. Platinum
c. Copper d. Silver

8) **The compound that is not an ore of aluminium**
a. Cryolite b. Corundum
c. Flourspar d. Bauxite

9) **An example of a cyclic organic compound is**
a. Propene b. Pentene
c. Benzene d. Butene

10) How much nitric acid is obtained after its distillation?
a. 70 % b. 65 %
c. 68 % d. **63 %**

11) **The electrolysis of acidified water is an example of**
a. Reduction b. Oxidation
c. Redox reaction d. Synthesis

12) **A mineral from which the metal can be extracted economically and conveniently is known as**
a. Matrix b. Ore
c. Flux d. Alloy

13) _____ **is the functional group in methanol**
a. >C=O b. -OH
c. -CHO d. –COOH

14) **A strong electrolyte is**
a. Nitric acid b. Acetic acid
c. Carbonic acid d. Formic acid

15) **Assertion (A): In a solution containing equal concentration of $Cu^{2+}$ ions and $Ca^{2+}$ ions, $Cu^{2+}$ ions will be discharged in preference to $Ca^{2+}$**
**Reason (R) $Ca^{2+}$ ions are placed below $Cu^{2+}$ ions in**

the electrochemical series.

a. Both (A) and (R) are true, and (R) is the correct explanation of (A)

b. Both (A) and (R) 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

**Q2 Complete the following by choosing answers from the bracket.** (1x5=5)

a. Zinc hydroxide forms gelatinous ___ ppts (white Blue on reaction with sodium hydroxide.

b. ____ ($H_2/O_2$)gas is liberated at anode during electrolysis of water.

c. The process of heating the ore in the absence of oxygen is known as ____ (roasting calcitation)

d. In purification of aluminium the carbon electrode serve as a ____(cathode/anode)

e. In electrolysis of fused lead bromide electrodes made up of_____(graphite/platinum) are used.

**Q3 Complete and balance the following equation.** (1x5=5)

a. $Al_2O_3 + \text{conc.NaOH} \rightarrow$

b. $CaCl_2 + 2NH_4OH \rightarrow$

c. $Fe_2O_3 + 3CO \rightarrow$

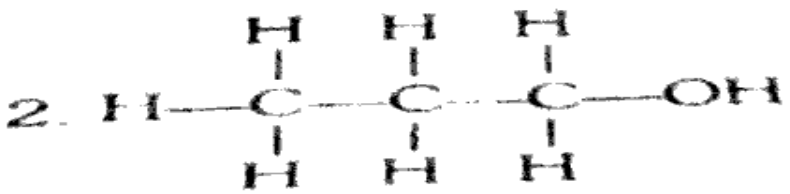
d. $PbO + H_2 \rightarrow$

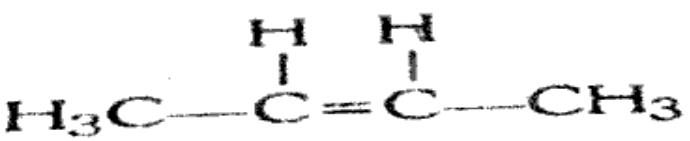
e. $CH_3COOH + NaOH \rightarrow$

**Q4.**

**a) Give IUPAC name of the following compound;** (3)

1. 

2. 

3. 

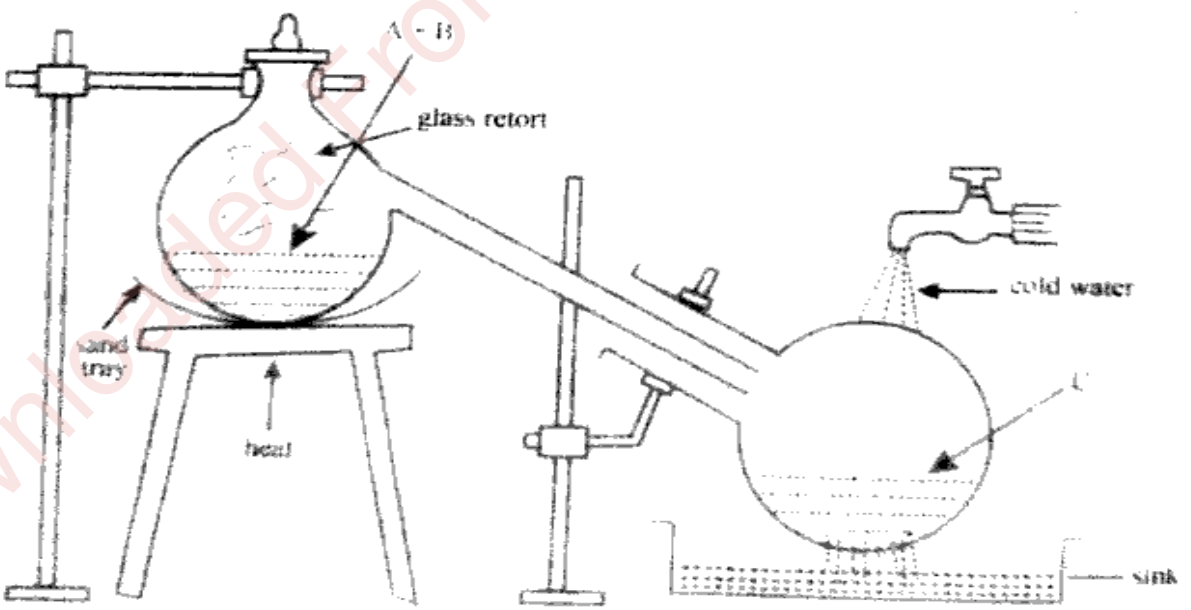
b) **Give structural formulae** **(2)**

1. Diethyl ether
2. 2,2 Dichlrobutane

**Q5. Ammonium hydroxide solution is added to the solution containing the salts mentioned in List X. List Y gives the details of the precipitate. Match the salts with their** coloured precipitate. (5)

| List X | List Y |
|---|---|
| a.$ZnSO_4$ | 1. No visible reaction |
| b.$FeSO_4$ | 2. White precipitate insoluble in excess |
| c.$Pb(NO_3)_2$ | 3. Gelatinous white precipitate soluble in excess |
| d.$FeCl_3$ | 4. Blue precipitate soluble in excess |
| e.$Ca(NO_3)_2$ | 5. Dirty green precipitate insoluble in excess |
| | 6. Reddish brown precipitate insoluble in excess |

**Q6 Study the figure given below and answer the question that follow.** (1x5=5)




a. Name A (a liquid), B (a solid) and C (a liquid)
b. Why HCl is not used in place of Conc. $H_2SO_4$ in the process?

c. Write an equation for the reaction in which sulphur is oxidized into sulphuric acid.

## SECTION – B

(Attempt any four questions from this section)

Q7.

A) State what do you observe when. (1x2 = 2)

a. Sodium hydroxide solution in added to a solution of calcium nitrate.

b. Ammonium hydroxide solution is added in excess to copper sulphate solution.

B) Give one words. (1x2 = 2)

a. A substance that conducts electricity in molten or aqueous state.

b. Plates of metals dipped in an electrolyte.

C) The following questions are related to the extraction of aluminum by electrolysis. (1x3 = 3)

a. Name the other aluminum Containing Compound added to alumina.

b. Give the equation for the reaction that takes place at the anode.

c. Explain why is it necessary to renew the anode periodically.

D) Give balanced equation of the following . (1x3 = 3)

a. Reaction of carbon powder and concentrated nitric Acid

b. Action of hot and concentrated nitric Acid with copper.

c. Action of cold and dilute nitric Acid on copper.

Q8.

A) How will distinguish between following pairs of compounds using reagent given in the bracket. (1x2 = 2)

a. Iron (II) sulphate and Iron (III) chloride.(using ammonium hydroxide)

b. Ferrous sulphate and Copper sulphate (using ammonium hydroxide )

B) Answer the following question about electroplating of copper wire with silver. (1x2 = 2)

a. What ions must be present in the electrolyte?
b. What substance must the Anode be made

C) Answer the following questions. (1x3 = 3)

a. Name the most common ore of the metal aluminium from which the metal is extracted. Write the chemical formula of the ore.
b. Name the process by which impure ore of aluminium gets purified by using concentrated solution of an alkali.
c. Write the equation for the formation of aluminium at the cathode during the electrolysis of alumina.

D) Answer the with reference to electro refining of copper? (1x3 = 3)

a. What is the anode made of?
b. What do you observe at the Cathode?
c. Write the reaction taking place at the anode.

**Q9.**

A) What in colour of the precipitates when sodium hydroxide is added to the following solution. (2)

a. Lead nitrate
b. Ferrous chloride

B) Draw the structural formula for each of the following (5)

1. 2,3-Dimethylbutane
2. Propanoic acid
3. Butane
4. Propene
5. Pentan-2-one

D) Match the alloy given in Colum in (I) to the given in Column (II) (1x3 = 3)

| Column (I) | Columin (II) |
|---|---|
| a. Brass | Soldering |
| b. Solder | Automobile parts |
| c. Stainless Steel | Electric Switches |

**Q10.**

**A) Given reason** **(1x2 = 2)**

a. Yellow colour appears when Conc. nitric Acid is left standing in an ordinary Glass bottle.
b. The apparatus for the preparation of nitric Acid by heating conc. $H_2SO_4$ and potassium nitrate should be all glass.

**B)** **Write the colour of the following salts.** (1x2 = 2)

i) $CaCl_2$ ii) $FeCl_3$

**C)** **Rohan wants to electroplate a spoon with nickel.** (1x3 = 3)

a. To which electrode should he connect the article to be electroplated?

b. Write the equation for the reaction that will occur at the cathode.

c. What should the anode be made up of?

**D)** **Study and Complete the following.** (1x3 = 3)

| **Homologous series** | **Alkane** | **Alkyne** |
|---|---|---|
| General formula | $C_nH_{2n+2}$ | 1.---------- |
| IUPAC name | 2.---------- | Ethyne |
| Common name | Marsh gas | 3.---------- |

**Q11.**

**A)** **Complete the following equation** (1x2 = 2)

a. $ZnO + 2\,KOH \longrightarrow$

b. $PbO + 2\,NaOH \longrightarrow$

**B)** **Name the main component of the following alloys** (1x2 = 2)

a. Bronze

b. Duralumin

**C)** **Copy and complete the following table relating to the important industrial process. Output refers to the product of the process and not the Intermediate steps.** (1x3 = 3)

| Name the process | Inputs | Catalyst | Equation for Catalyzed reaction | Output |
|---|---|---|---|---|
| Ostwald's process | Ammonia + Air | 1 | 2 | 3 |

**D)** **Give balanced chemical equation of the following:** (1x3 = 3)

a. Laboratory preparation of methane from sodium acetate.

b. Ethene reacting with bromine

c. Laboratory preparation of acetylene from calcium carbide

**Q12.**

**A) During the electrolysis of fused lead bromide what products are formed at.** **(1x2 = 2)**

a. Cathode

b. Anode

**B) Define** **(1x2 = 2)**

a. Denatured alcohol

b. Spurious alcohol

**C) Give the Chemical formulae of** **(1x3 = 3)**

a. Bauxite

b. Cryolite

c. Haematite

**D) A Answer the following question related to large scale production of nitric acid** **(1x3 = 3)**

a. Name the process by which nitric acid is obtained on a large Scale

b. State the ratio in which reactants are taken

c. Why excess air is taken in the process.