



REVISION SHEET

SUBJECT: CHEMISTRY

CLASS-X

TERM 1

1. Multiple Choice Questions:

1. A student places an iron nail in copper sulphate solution. After some time, the blue colour of the solution fades and a reddish-brown coating appears on the nail. Which type of reaction has taken place?

- A. Combination reaction B. Double displacement reaction
C. Displacement reaction D. Decomposition reaction

2. Which gas is evolved when zinc reacts with dilute hydrochloric acid?

- A. Oxygen B. Carbon dioxide C. Hydrogen D. Chlorine

3. Which of the following solutions has pH greater than 7?

- A. Lemon juice B. Vinegar C. Soap solution D. Dilute hydrochloric acid

4. Which metal is stored under kerosene?

- A. Copper B. Zinc C. Sodium D. Iron

5. The brown coating formed on silver articles is mainly

- A. Silver oxide B. Silver sulphide C. Silver chloride D. Silver carbonate

6. Which gas is produced during electrolysis of acidified water at the cathode?

- A. Oxygen B. Hydrogen C. Chlorine D. Carbon dioxide

7. Which oxide is amphoteric?

- A. Na_2O B. MgO C. Al_2O_3 D. CO_2

8. Which salt is used in making baking powder?

- A. Sodium carbonate B. Sodium hydrogen carbonate C. Calcium carbonate D. Sodium chloride

9. Which metal is extracted by electrolytic reduction?

- A. Iron B. Zinc C. Aluminium D. Copper

10. A metal reacts with dilute acid but does not react with cold water. Which metal is most likely to be

- A. Sodium B. Calcium C. Magnesium D. Copper

2. Assertion–Reason Questions :

Directions:

Choose the correct option.

A. Both Assertion (A) and Reason (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.

1. **Assertion (A):** Burning magnesium ribbon is a combination reaction.

Reason (R): Magnesium combines with oxygen to form a single product, magnesium

2. **Assertion (A):** The reaction between silver nitrate solution and sodium chloride solution is a precipitation reaction.

Reason (R): An insoluble white precipitate of silver chloride is formed.

3. **Assertion (A):** Bleaching powder is prepared by passing chlorine gas over dry slaked lime.

Reason (R): Chlorine reacts with calcium hydroxide to form bleaching powder.

4. **Assertion (A):** Hydrochloric acid does not show acidic properties in the absence of water.

Reason (R): Acids produce hydrogen ions only in aqueous solution.

5. **Assertion (A):** All acids conduct electricity.

Reason (R): Acids conduct electricity because they contain free electrons.

6. **Assertion (A):** Washing soda is used to soften hard water.

Reason (R): It removes calcium and magnesium ions from hard water.

7. **Assertion (A):** Tooth enamel is mainly made of calcium phosphate.

Reason (R): Tooth enamel dissolves when the pH falls below 5.5.

8. **Assertion (A):** Copper is extracted by electrolysis.

Reason (R): Copper is less reactive than carbon.

9. **Assertion (A):** Metals above hydrogen in the reactivity series liberate hydrogen gas from dilute acids.

Reason (R): They are more reactive than hydrogen.

10. **Assertion (A):** Silver ornaments lose their shine due to corrosion.

Reason (R): Silver reacts with hydrogen sulphide present in air to form silver sulphide.

3. Case-Based Question :

1. A company manufactures aluminium utensils. Before anodising, the aluminium utensils are cleaned using sodium hydroxide solution. Later they are dipped into dilute acid and finally anodised.

Answer the following.

1. Why is aluminium cleaned with NaOH although aluminium is a metal?

2. Why does aluminium not corrode easily after anodising?

3. Which property of aluminium oxide makes it suitable for protection?

4. State one industrial advantage of anodising besides corrosion prevention.

2. A student observed the following while heating copper powder in a porcelain dish. Initially, the copper powder was reddish-brown. After heating, it became black. On passing hydrogen gas over the black substance, the reddish-brown colour returned.

Answer the following:

1. Name the black substance formed.

2. Which type of reaction occurs when copper is heated?

3. Write the balanced equation for the reduction of black copper oxide.

4. Why is hydrogen called a reducing agent in this reaction?

3. Three students were discussing the extraction of metals.

- Student A: "Potassium can be extracted by heating its oxide with carbon."

- Student B: "Iron is extracted by reducing its oxide using carbon."

- Student C: "Copper can be obtained by heating its oxide."

Answer the following:

1. Which student's statement is incorrect?

2. Give the reason for your answer.

3. Write the balanced equation for the reduction of iron(III) oxide by carbon monoxide in a blast furnace.

4. Explain why copper oxide can be reduced by heating with carbon, whereas aluminium oxide cannot.

4.Short Answer Questions (2 Marks)

1. A student accidentally leaves a freshly cut apple exposed to air. After some time, the cut surface turns brown.
 - a) Which type of chemical change is taking place?
 - b) Suggest one method to slow down this process.
2. A white powder A is used in bakeries. On heating, it releases a gas that makes cakes soft and fluffy.
 - a) Identify A.
 - b) Write the balanced chemical equation for its thermal decomposition.
3. A jeweller advises storing silver ornaments in airtight containers. Give two scientific reasons.
4. A student adds dilute hydrochloric acid separately to copper and zinc strips.
State the observations and justify the difference.
5. A metal oxide reacts with both dilute hydrochloric acid and sodium hydroxide solution.
 - a) What type of oxide is it?
 - b) Name one metal whose oxide shows this property.

5. Short Answer Questions (3 Marks)

1. A student added dilute hydrochloric acid to four different substances. The observations are given below.

Substance	Observation
Zinc granules	Brisk effervescence
Copper wire	No change
Sodium carbonate	Brisk effervescence
Sodium hydroxide	No gas evolved

Answer the following:

- a) Identify the gas evolved in experiments 1 and 3.
- b) Write balanced chemical equations for any two reactions.
- c) Explain why copper does not react.

2. Different metals react differently with oxygen.

Using magnesium, iron and copper as examples, explain their behaviour with oxygen.

3. An antacid tablet contains magnesium hydroxide.

Answer the following:

- a) Why is magnesium hydroxide used as an antacid?
- b) Write the balanced chemical equation showing its action.
- c) Why should excess use of antacids be avoided?

4. A student keeps iron nails in the following solutions for three days.

- Copper sulphate solution
- Zinc sulphate solution
- Silver nitrate solution

Predict the observations with reasons.

5. A student added dilute HCl to four metals X, Y, Z and W. The observations are shown below.

Metal	Observation
X	No reaction
Y	Brisk effervescence
Z	Slow evolution of gas
W	Violent reaction

Using the above information,

- a) Arrange the metals in decreasing order of reactivity.
 - b) Which metal is likely to be copper?
 - c) Which metal could be sodium? Give reason.
6. A metal carbonate and a metal nitrate are heated separately. Both evolve gases.
- a) Identify the gases evolved.
 - b) Explain how each gas can be identified experimentally.
 - c) State the type of chemical reaction involved.

6. Long Answer Questions (5 Marks)

1. A metallurgy engineer receives the following ores:

Zinc sulphide , Zinc carbonate , Aluminium oxide

Answer the following:

- a) Which ore is subjected to roasting?
 - b) Which ore undergoes calcination?
 - c) Why is aluminium extracted by electrolysis?
 - d) Write the balanced equation for roasting of zinc sulphide.
 - e) Explain why sulphide ores are first converted into oxides before reduction.
2. Three metals A, B and C show the following behaviour:
- A reacts vigorously with cold water.
 - B reacts with steam but not with cold water.
 - C does not react with water but reacts with dilute hydrochloric acid.

Answer the following:

- a) Identify one possible metal for A, B and C.
 - b) Write balanced equations for the reactions.
 - c) Arrange the metals in decreasing order of reactivity.
3. A student carried out the following sequence of reactions:



Answer the following:

- a) Write the balanced chemical equation for each reaction.
 - b) Identify the type of reaction involved in each step.
4. Iron objects kept near the seashore rust much faster than similar objects kept in dry regions.
- Answer the following:
- a) Explain the process of rusting.
 - b) State the conditions necessary for rusting.
 - c) Why does rusting occur faster near the sea?
 - d) Mention any two methods to prevent rusting.
 - e) Explain why prevention of corrosion is economically important.
5. Explain the following with balanced chemical equations:
- a) Rancidity
 - b) Corrosion
 - c) Thermal decomposition of ferrous sulphate
 - d) Thermal decomposition of lead nitrate
 - e) Photodecomposition of silver chloride

6. Answer the following:

- a) Write the formula of washing soda.
- b) Explain its preparation from baking soda with equations.
- c) Mention any two uses.
- d) Why is washing soda called a hydrated salt?

7. A student is given four colourless solutions A, B, C and D.

- A turns blue litmus red.
- B turns red litmus blue.
- C has $\text{pH} = 7$.
- D reacts with sodium carbonate producing brisk effervescence.

Answer the following:

- a) Identify A, B, C and D.
- b) Arrange them in increasing order of pH.
- c) Write the balanced chemical equation for the reaction of D with sodium carbonate.
- d) Name the gas evolved and describe one test to identify it.