

CBSE – Class X | Science (Chemistry)

Time: 45 Minutes

Maximum Marks: 25

General Instructions:

1. All questions are compulsory.
2. The question paper consists of 5 Sections – A, B, C, D and E.
3. Use of calculator is not permitted.
4. Draw neat diagrams wherever required.

Section A: Multiple Choice Questions (MCQs) (1 × 5 = 5 Marks)

Q1. Which of the following is a balanced chemical equation?

- a) $\text{Fe} + \text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$
- b) $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$
- c) $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$
- d) $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2$

Q2. The chemical formula of washing soda is:

- a) Na_2CO_3
- b) NaHCO_3
- c) $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
- d) CaCO_3

Q3. Which type of reaction takes place when quicklime reacts with water?

- a) Decomposition
- b) Combination
- c) Displacement
- d) Double displacement

Q4. Which gas is evolved when zinc reacts with dilute sulphuric acid?

- a) Oxygen
- b) Nitrogen

- c) Hydrogen
- d) Carbon dioxide

Q5. Which acid is present in sour milk?

- a) Acetic acid
 - b) Citric acid
 - c) Lactic acid
 - d) Tartaric acid
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Section B: Short Answer Questions – I ($2 \times 4 = 8$ Marks)

Q6. Write the balanced chemical equation for the reaction between iron and copper sulphate solution. State the type of reaction.

Q7. What is corrosion? Name one method to prevent corrosion.

Q8. Define pH scale. What is the pH value of a neutral solution?

Q9. Write the chemical name and one use of:

- a) Baking soda
 - b) Plaster of Paris
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Section C: Short Answer Questions – II ($3 \times 2 = 6$ Marks)

Q10. a) What happens when dilute hydrochloric acid is added to sodium carbonate?

b) Write the balanced chemical equation for the reaction.

OR

Explain why magnesium ribbon should be cleaned before burning in air.

Q11. Explain the process of **oxidation and reduction** with the help of one example.

Section D: Assertion–Reason Based Questions ($1 \times 2 = 2$ Marks)

Q12.

Assertion (A): Acids do not show acidic behavior in dry state.

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

Choose the correct option:

- 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
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Section E: Case-Based Question ($4 \times 1 = 4$ Marks)

Q13.

Ravi observed that when a piece of zinc metal was placed in a blue coloured copper sulphate solution, the colour of the solution gradually faded and a reddish-brown deposit formed on the zinc surface.

Answer the following questions:

- a) Which type of chemical reaction is taking place?
- b) Write the balanced chemical equation for the reaction.
- c) Which substance is oxidised in the reaction?
- d) Which substance is reduced in the reaction?