

Chemical Reactions and Equations

Class 10 Science | NCERT Science, Chapter 1 | Reprint 2026-27

Name: _____ Section: _____ Date: _____

8 questions | 16 marks | Suggested time: 25 minutes

Choose one option for Q1-2. For Q3-8, explain your reasoning in the spaces provided. No experiments are required.

1. Which observation is expected when magnesium ribbon burns in air? [1]

- A. A dazzling white flame and a white solid
- B. A green flame and a black solid
- C. Only a change in shape
- D. No new substance forms

2. Which equation is correctly balanced? [1]

- A. $\text{Mg} + \text{O}_2 \rightarrow \text{MgO}$
- B. $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$
- C. $\text{Mg} + 2\text{O}_2 \rightarrow \text{MgO}$
- D. $2\text{Mg} + 2\text{O}_2 \rightarrow \text{MgO}$

3. Balance the equation $\text{Fe} + \text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$. State the law that requires chemical equations to be balanced. [2]

4. Define a combination reaction and a decomposition reaction. [2]

5. For $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$, identify the substance oxidised and the substance reduced. [2]

CHEMICAL REACTIONS / APPLY YOUR LEARNING

Use what you know to explain everyday situations.

6. A student tries to balance $\text{Mg} + \text{O}_2 \rightarrow \text{MgO}$ by changing MgO to MgO_2 . Explain why this is incorrect and write the balanced equation. **[2]**

7. An iron nail is placed in copper sulphate solution. State the expected colour change of the solution, describe the coating on the nail, and identify the reaction type. **[3]**

8. A manufacturer flushes packets of oily snacks with nitrogen before sealing them. Identify the chemical process this helps prevent, explain the role of nitrogen, and suggest one other way to slow this process. **[3]**

Original questions based on NCERT Science, Class 10, Chapter 1. Not published or endorsed by NCERT or CBSE.