

**QUESTION BANK**

**CLASS: 10 SUBJECT: CHEMISTRY**

**CHAPTER: 1 – CHEMICAL REACTIONS AND EQUATIONS**

**1. Remembering (Knowledge Recall)**

*Recall facts, definitions, or basic concepts*

1. Define a chemical reaction.
2. What is a chemical equation?
3. Write the chemical formula of quick lime and slaked lime.
4. State the law of conservation of mass.
5. What is meant by a balanced chemical equation?

**🟠 2. Understanding (Comprehension)**

*Explain ideas or concepts*

1. Explain with an example the difference between a physical change and a chemical change.
2. Why is it important to balance a chemical equation?
3. Describe what happens when magnesium ribbon burns in air.
4. Why do we apply a coating of zinc on iron?
5. Identify the type of reaction in:

2FeSO4→Fe2O3+SO2+SO32FeSO\_4 \rightarrow Fe\_2O\_3 + SO\_2 + SO\_32FeSO4​→Fe2​O3​+SO2​+SO3​

**🟡 3. Applying (Application)**

*Use information in new situations*

1. Balance the following chemical equation:

Fe+H2O→Fe3O4+H2Fe + H\_2O \rightarrow Fe\_3O\_4 + H\_2Fe+H2​O→Fe3​O4​+H2​

1. A student mixes silver nitrate and sodium chloride solutions. What do you observe? Write a balanced equation.
2. Write the balanced chemical equation for the reaction between calcium hydroxide and hydrochloric acid.
3. Identify the oxidizing and reducing agents in the following reaction:

Zn+CuSO4→ZnSO4+CuZn + CuSO\_4 \rightarrow ZnSO\_4 + CuZn+CuSO4​→ZnSO4​+Cu

1. A student heats lead nitrate in a test tube. What is observed? Write the chemical equation for the reaction.

**🟢 4. Analyzing**

*Draw connections among ideas*

1. Differentiate between combination and displacement reactions with suitable examples.
2. Identify the type of reaction and balance the following:

BaCl2+Na2SO4→BaSO4+NaClBaCl\_2 + Na\_2SO\_4 \rightarrow BaSO\_4 + NaClBaCl2​+Na2​SO4​→BaSO4​+NaCl

1. Compare and contrast oxidation and reduction reactions.
2. Analyze the following equation and identify the change in oxidation state:

MnO2+4HCl→MnCl2+Cl2+2H2OMnO\_2 + 4HCl \rightarrow MnCl\_2 + Cl\_2 + 2H\_2OMnO2​+4HCl→MnCl2​+Cl2​+2H2​O

1. Classify the following reactions and explain your choice:
   * 2K+2H2O→2KOH+H22K + 2H\_2O \rightarrow 2KOH + H\_22K+2H2​O→2KOH+H2​
   * AgNO3+NaCl→AgCl+NaNO3AgNO\_3 + NaCl \rightarrow AgCl + NaNO\_3AgNO3​+NaCl→AgCl+NaNO3​

**🔵 5. Evaluating**

*Justify a decision or course of action*

1. Which type of chemical reaction is most useful in daily life? Justify with examples.
2. A metal ‘X’ reacts with dilute hydrochloric acid to form a gas ‘Y’ which burns with a pop sound. Identify ‘X’ and ‘Y’ and justify your answer.
3. Evaluate the importance of redox reactions in biological systems.
4. Why is it dangerous to store silver nitrate in a transparent bottle? Explain.
5. Should food be stored in aluminum containers after cooking acidic foods? Give reasons.

**🟣 6. Creating (Synthesis)**

*Produce new or original work*

1. Design a simple experiment to show a chemical reaction involving a color change.
2. Create a balanced chemical equation for a reaction involving an acid and a metal carbonate.
3. Construct a table listing different types of chemical reactions with examples and their balanced equations.
4. Design a poster showing the importance of balancing chemical equations in real life.
5. Formulate an activity to demonstrate the release of gas during a chemical reaction and how it can be tested.

Would you like this in **editable Word/PDF format**, or should I include **answer keys** for these questions as well?

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