

# Chemical Reactions (KS3)

## Section A – Recall (1–2 marks each)

Q1 (1 mark)

What is a chemical reaction?

Q2 (1 mark)

What happens to atoms during a chemical reaction?

Q3 (1 mark)

What is combustion?

Q4 (1 mark)

What is oxidation?

Q5 (2 marks)

State TWO signs that a chemical reaction has occurred.

Q6 (2 marks)

State TWO products of (complete) combustion.

Q7 (2 marks)

State TWO properties of acids.

Q8 (2 marks)

State TWO properties of alkalis.

Q9 (2 marks)

State TWO indicators used to measure pH.

Q10 (2 marks)

State TWO products formed when an acid reacts with a metal.

Q11 (2 marks)

State TWO products formed when an acid reacts with an alkali.

## Section B – Understanding (3-4 marks each)

Q12 (3 marks)

Write the word equation for magnesium reacting with hydrochloric acid.

Q13 (3 marks)

Write the word equation for sulfuric acid reacting with sodium hydroxide.

Q14 (4 marks)

Write the word equations for the complete and incomplete combustion of methane.

Q15 (3 marks)

Write the word equation for the thermal decomposition of calcium carbonate.

Q16 (3 marks)

Explain what happens during a displacement reaction.

Q17 (3 marks)

Explain how indicators and the pH scale are used to identify acids and alkalis.

Q18 (3 marks)

Explain the role of a catalyst in a chemical reaction.

## Section C – Application (3-4 marks each)

Q19 (4 marks)

A student at *Learntit* puts zinc in a beaker of hydrochloric acid. Explain what happens and write the word equation.

Q20 (4 marks)

Explain what happens during the neutralisation of nitric acid with potassium hydroxide and write the word equation.

Q21 (3 marks)

Copper oxide is heated with carbon. Explain why this is an oxidation and reduction reaction.

Q22 (4 marks)

Explain what happens during the displacement reaction between iron and copper sulfate.

Q23 (4 marks)

Explain thermal decomposition using the example of copper carbonate.

## Section D – Challenge (6 marks)

Q24 (6 marks)

Write balanced symbol equations for the following reactions:

- Magnesium + hydrochloric acid → magnesium chloride + hydrogen
- Methane + oxygen → carbon dioxide + water
- Sulfuric acid + sodium hydroxide → sodium sulfate + water

Total: \_\_\_\_ / 65  
Percentage: \_\_\_\_%