

**AQA, OCR, Edexcel**

**GCSE Science**

# **GCSE Chemistry**

Tests for Ions and Gases  
Questions

**M M E**

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Total Marks: /39

Q1: Match up these tests for these common gases.

Carbon dioxide	Glowing splint inserted into a test tube of the gas. Splint relights
Chlorine	Burning splint held at the open end of a test tube. It burns rapidly with a pop sound.
Hydrogen	This test uses litmus paper. When damp litmus paper is put into the gas the paper is bleached and turns white.
Oxygen	Using an aqueous solution of calcium hydroxide. When the gas is shaken with or bubbled through limewater it turns cloudy.

(4 marks)

**Flame tests**

Q2: Flame tests can be used to identify metal ions.

Match up the compounds with the colour of the flame.

Lithium	Yellow
Copper	Green
Potassium	Lilac
Calcium	Orange
Sodium	Orange-red

(6 marks)

Q3: If a sample contains a mixture of ions what can happen to the flame colour?

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(1 mark)

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### **Metal hydroxides**

Q4: Sodium hydroxide is used to identify some metal ions. Fill in the gaps in the following sentences.

Solutions of \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ ions form white precipitates when sodium hydroxide solution is added.

(3 marks)

Q5: Which hydroxide precipitate dissolves in excess sodium hydroxide solution?

\_\_\_\_\_

(1 mark)

Q6: Solutions of copper (II), iron (II) and iron (III) form coloured precipitates. What colours are these?

Ions	Colour
Copper (II)	
Iron (II)	
Iron (III)	

(3 marks)

Q7: Complete the following sentences.

Carbonates react with \_\_\_\_\_ to form \_\_\_\_\_. This can be identified using \_\_\_\_\_.

(3 marks)

Q8: Halide ions in solution produce precipitates with silver nitrate solution in the presence of dilute nitric acid. What colour are the precipitates?

Silver chloride	_____
Silver bromide	_____
Silver iodide	_____

(3 marks)

Q9: What is flame emission spectroscopy?

\_\_\_\_\_  
\_\_\_\_\_

(1 mark)

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Q10: Explain how it works.

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(3 marks)