

Identifying the Products of Chemical Reactions (F)

1. The table shows the stages in a flame test.

Stage	Process
1	Dip a nichrome wire loop into the test solution.
2	Observe and record the flame colour.
3	Clean a nichrome wire loop with hydrochloric acid, then rinse with distilled water.
4	Hold the nichrome wire loop in the edge of a roaring blue flame.

Which is the correct order for the stages in a flame test?

- A 1, 4, 2, 3
- B 1, 4, 3, 2
- C 3, 1, 4, 2
- D 3, 4, 1, 2

Your answer

[1]

2. A student adds a few drops of sodium hydroxide solution to an unknown solution and a blue precipitate is made.

Which metal ion is present in the original solution?

- A Calcium
- B Copper(II)
- C Iron(II)
- D Iron(III)

Your answer

[1]

3. Which statement describes the test for **chlorine gas**?

- A A lighted splint makes a squeaky pop.
- B Limewater turns milky.
- C A glowing splint re-lights.
- D Damp litmus paper is bleached.

Your answer

[1]

4. Which statement describes the properties of **transition metals**?

- A High melting point, shiny when freshly cut and brittle.
- B Good conductors of electricity, low density and low melting point.
- C Good conductors of electricity, strong and malleable.
- D Strong, malleable and low density.

Your answer

[1]

5(a). A student investigates a white solid.

Table 17.1 shows some of the results of the tests that the student does.

	Test	Results
Test 1	flame test	a lilac flame
Test 2	dilute hydrochloric acid added gas given off passed into limewater	effervescence ?

Table 17.1

i. Which **ion** is shown to be in the white solid by the result of **Test 2**?

..... [1]

ii. The **gas** given off in **Test 2** is carbon dioxide, CO₂.

What is the expected result with limewater?

..... [1]

(b). Which **ion** is shown to be in the white solid by the result of **Test 1**?

..... [1]

6 (a). Chemical tests are used to identify gases, anions and cations.

Draw straight lines to match the **gas** to the correct **chemical test** used in analysis.

gas	chemical test
	relights a glowing splint
carbon dioxide	turns moist red litmus blue
chlorine	turns moist blue litmus red and then white
ammonia	turns acidified potassium manganate(VII) solution colourless
hydrogen	turns lime water milky
oxygen	burns with a squeaky pop
	turns moist pH paper green

[5]

(b). Fahmida uses the flame test to identify the cations in a solid.

Describe how Fahmida should do a flame test.

[3]

(c). Fahmida does three chemical tests on an unknown solution.

Look at her results.

Chemical test	Result
pH probe	pH value is 3
dilute hydrochloric acid followed by barium chloride solution	white precipitate
dilute nitric acid followed by silver nitrate solution	white precipitate

Which ions are present in the solution?

Choose from:

calcium

hydrogen

iron(II)

chloride

sulfate

Explain your answer.

[4]

7. A student is testing sodium carbonate solution.

She adds barium chloride solution followed by excess dilute hydrochloric acid.

Which of these observations would **not** be seen?

- A. colourless solution at the end
- B. gas bubbles when the dilute acid is added
- C. white precipitate formed when the dilute acid is added
- D. white precipitate formed when the barium chloride solution is added

Your answer

[1]

8. A student adds sodium hydroxide solution to a small sample of copper(II) chloride solution.

A precipitate is made.

What is the colour of the precipitate?

- A. blue
- B. green
- C. orange
- D. white

Your answer

[1]

END OF QUESTION PAPER