

## Paper 1

Questions are applicable for both core and extended candidates

- 1 Copper(II) sulfate crystals are blue. They are made by adding an excess of copper(II) oxide to sulfuric acid.

The mixture is heated and stirred.

The mixture is then filtered and the filtrate is allowed to evaporate, leaving blue crystals.

Why is filtration necessary?

- A to remove soluble impurities
  - B to remove sulfuric acid
  - C to remove the blue crystals
  - D to remove unreacted copper(II) oxide
- 2 2.00 g of powdered calcium carbonate is added to 50.0 cm<sup>3</sup> of hydrochloric acid.

Which apparatus is used to measure these quantities of calcium carbonate and hydrochloric acid?

	calcium carbonate	hydrochloric acid
A	balance	burette
B	balance	thermometer
C	pipette	burette
D	pipette	thermometer

- 3 Which piece of apparatus is used to measure exactly 5.00 cm<sup>3</sup> of a liquid?

- A 5 cm<sup>3</sup> beaker
- B 10 cm<sup>3</sup> measuring cylinder
- C 25 cm<sup>3</sup> pipette
- D 50 cm<sup>3</sup> burette

- 4 A student measures the time taken for 2.0 g of magnesium to dissolve in 50 cm<sup>3</sup> of dilute sulfuric acid.

Which apparatus is essential to complete the experiment?

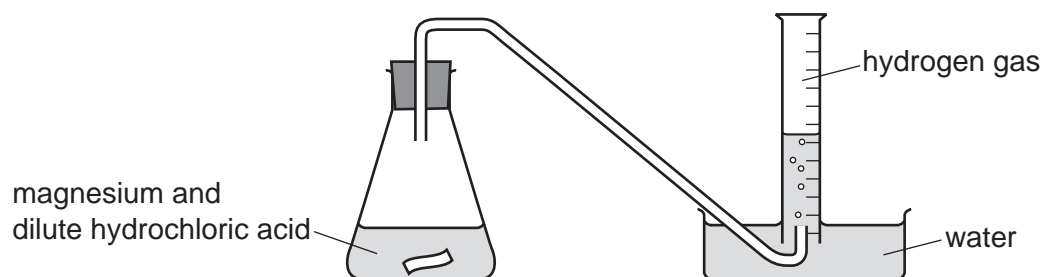
- 1 stop-clock
- 2 measuring cylinder
- 3 thermometer
- 4 balance

**A** 1, 2 and 4      **B** 1 and 2 only      **C** 1 and 4 only      **D** 2, 3 and 4

- 5 Which piece of apparatus is used to measure exactly 25.0 cm<sup>3</sup> of hydrochloric acid?

- A** beaker
- B** burette
- C** conical flask
- D** test-tube

- 6 The apparatus used to investigate the rate at which hydrogen gas is given off when a piece of magnesium reacts with dilute hydrochloric acid is shown.



Which additional piece of apparatus is needed to determine the rate of reaction?

- A** balance
- B** burette
- C** stop-watch
- D** volumetric pipette