

Paper 1

Questions are applicable for both core and extended candidates

- 1 An aqueous solution reacts with a solid. The products are an alkaline gas, a salt and water.

What are the aqueous solution and the solid?

	aqueous solution	solid
A	sodium hydroxide	magnesium carbonate
B	hydrochloric acid	magnesium carbonate
C	hydrochloric acid	ammonium chloride
D	sodium hydroxide	ammonium chloride

- 2 Which substances react to form hydrogen gas?

- 1 calcium and water
- 2 silver and dilute hydrochloric acid
- 3 magnesium and steam
- 4 zinc and dilute hydrochloric acid

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

- 3 Which gas is made when powdered zinc is added to dilute hydrochloric acid?

- A** carbon dioxide
B chlorine
C hydrogen
D oxygen

- 4 Three students, X, Y and Z, are told that solid P reacts with dilute acids and also conducts electricity.

The table shows the students' suggestions about the identity of P.

X	Y	Z
copper	iron	graphite

Which students are correct?

A X, Y and Z **B** X only **C** Y only **D** Z only

5 The table shows some physical properties of four different substances.

Which row describes the properties of a non-metallic element?

	melting point /°C	conductivity when solid	conductivity when melted
A	63	good	good
B	119	poor	poor
C	659	good	good
D	808	poor	good

6 What is a property of **all** metals?

- A** conducts electricity
- B** hard
- C** low melting point
- D** reacts with water

7 A metal reacts vigorously with cold water.

Which statement about the metal is correct?

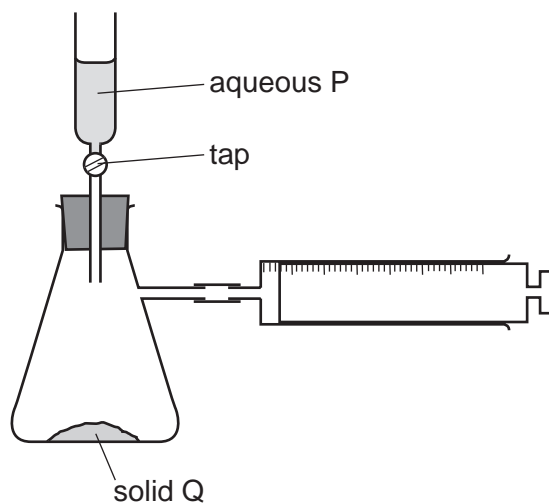
- A** It is above hydrogen in the reactivity series.
- B** It is below magnesium in the reactivity series.
- C** Its oxide can be reduced with carbon.
- D** It does not react with dilute acids.

8 Which statements about the general properties of metals are correct?

- 1 They are good conductors of heat and electricity.
- 2 They have low melting points.
- 3 They react with dilute acids to form a salt and water.
- 4 They react with oxygen to form basic oxides.

- A** 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

9 The diagram shows an experiment.



A small volume of aqueous P is poured on to solid Q and the tap of the funnel closed.

Which pairs of substances cause the syringe to fill with gas?

	HNO ₃ and Mg	HCl and Cu	H ₂ SO ₄ and Na ₂ CO ₃
A	✓	✓	✓
B	✓	✓	x
C	✓	x	✓
D	x	✓	✓

Paper 2

Questions are applicable for both core and extended candidates
unless indicated in the question

10 Which substances react to form hydrogen gas?

- 1 calcium and water
- 2 silver and dilute hydrochloric acid
- 3 magnesium and steam
- 4 zinc and dilute hydrochloric acid

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

11 Which statement about metals is **not** correct?

- A They conduct electricity because delocalised electrons can move throughout the metal.
- B They consist of layers of atoms that can slide over each other.
- C They have a giant lattice of oppositely charged ions in a 'sea' of delocalised electrons.
- D They have a giant lattice of positive ions in a 'sea' of delocalised electrons.