

Paper 1

Questions are applicable for both core and extended candidates

1 Which statements explain why a water tap made of steel is electroplated with copper?

- 1 It improves the conductivity of the tap.
- 2 It improves the tap's resistance to corrosion.
- 3 It increases the density of the tap.

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

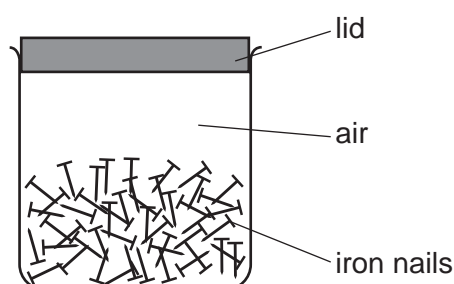
2 Which substances are required for iron to rust?

- A** oxygen and salt
- B** oxygen only
- C** water and oxygen
- D** water and salt

3 Which substances in the air are needed for iron to rust?

- A** oxygen and water
- B** oxygen only
- C** water and carbon dioxide
- D** water only

4 Iron nails are stored in an airtight container.



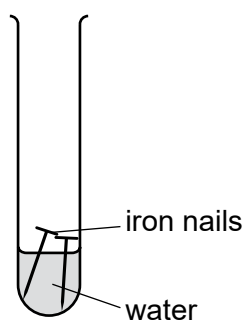
The nails begin to rust after a few days.

How can the rusting of the nails be prevented?

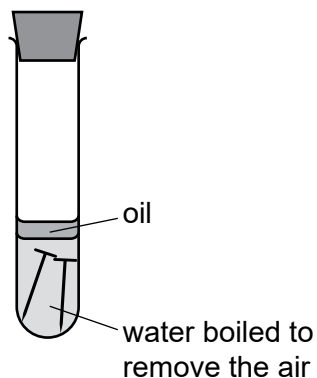
- A** Leave the lid off.
- B** Replace the air with argon.
- C** Put the container in a warm place.
- D** Seal the container in a bag.

5 The diagrams show experiments involving the rusting of iron.

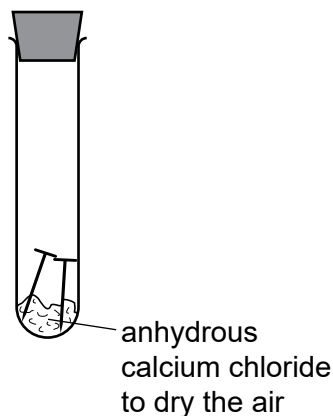
test-tube P



test-tube Q



test-tube R



A student predicted the following results.

- 1 In test-tube P, the iron nails rust.
- 2 In test-tube Q, the iron nails do not rust.
- 3 In test-tube R, the iron nails do not rust.

Which predictions are correct?

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

6 Iron rusts when exposed to air.

Which two substances in air cause iron to rust?

- A** carbon dioxide and oxygen
B nitrogen and oxygen
C oxygen and water
D carbon dioxide and water

Paper 2

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

- 7 Iron rusts but aluminium does **not** easily corrode.

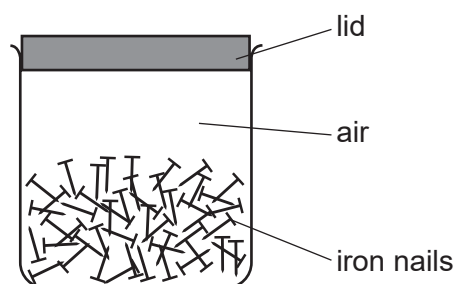
Which statement explains why aluminium does **not** easily corrode? **(extended only)**

- A It is an alloy.
- B It is below iron in the reactivity series.
- C It is a transition element.
- D Its surface is protected by an oxide layer.

- 8 Which statement explains why aluminium appears to be unreactive? **(extended only)**

- A It is coated in an oxide layer.
- B It has a low density.
- C It is low in the reactivity series.
- D It is solid at room temperature.

- 9 Iron nails are stored in an airtight container.

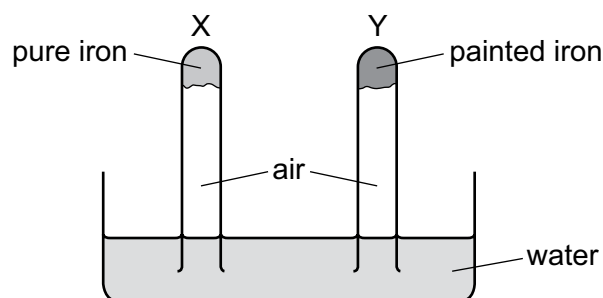


The nails begin to rust after a few days.

How can the rusting of the nails be prevented?

- A Leave the lid off.
- B Replace the air with argon.
- C Put the container in a warm place.
- D Seal the container in a bag.

10 An experiment to investigate the effect of painting iron is shown.



The experiment is left for seven days.

What happens to the water level in test-tubes X and Y?

	test-tube X	test-tube Y
A	falls	rises
B	no change	no change
C	rises	falls
D	rises	no change

11 Mild steel is galvanised to prevent corrosion of the iron. **(extended only)**

Which statements about galvanising are correct?

- 1 Galvanising prevents corrosion because the zinc forms an alloy.
- 2 If the coating is damaged, water and oxygen do not corrode the iron.
- 3 Zinc is a sacrificial metal and corrodes in preference to iron.

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

12 Which metal is used to galvanise steel? **(extended only)**

- A** copper
B lead
C tin
D zinc