3 Hydrogen and chlorine react together to form hydrogen chloride, a covalent compound.

(a) Complete Fig. 14.1 to show the outer electrons in a molecule of hydrogen chloride.

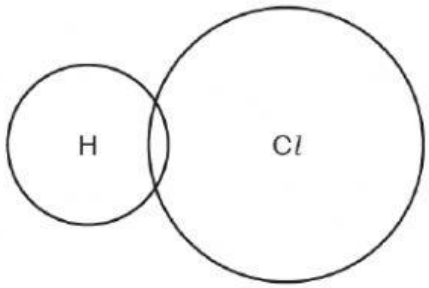


Fig. 14.1

[2]

(b) Hydrogen chloride dissolves in water to produce hydrochloric acid.

Hydrochloric acid reacts with copper oxide.

Complete the equation for this reaction.

$$CuO + \text{.....}\ HCl \longrightarrow \text{.....} + H_2O$$

[1]

(c) Explain why hydrochloric acid does not react with copper metal.

.....

.....[1]

4 Equal volumes of dilute nitric acid are placed into three separate test-tubes. Small pieces of three metals **A**, **B** and **C** are placed in the test-tubes.

The results are shown in Fig. 6.1.

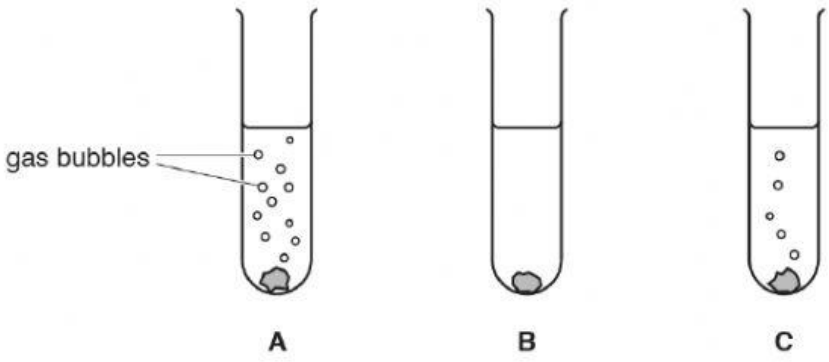


Fig. 6.1

(b) Determine the order of reactivity of the metals **A**, **B** and **C**.

most reactive .....

.....

least reactive ..... [2]

LIVEWORKSHEETS

(c) Nitric acid reacts with copper(II) carbonate to produce copper(II) nitrate, water and carbon dioxide.

(i) Complete and balance the equation for the reaction.

$CuCO_3$ + ... HNO_3 ⟶ $Cu(NO_3)_2$ + H_2O + ... [1]

(ii) State the names of two other substances that react with dilute nitric acid to produce copper(II) nitrate.

1 .....

2 .....

[2]

LIVEWORKSHEETS