GCSE Chemistry A (Gateway Science)

J248/01 Chemistry A C1-C3 and C7 (Foundation Tier)

Question Set 23

1 Magnesium is an element. It is solid at room temperature.

(a) (i) **Solid** magnesium cannot be compressed.

Why?

[1]

the particles in solids are already closely packed together thus fixed in position (cannot move). As a result, the solid cannot be compressed further (particles cannot get closer).

(ii) **Solid** magnesium **cannot** flow, but **liquid** magnesium **can** flow.

Explain why.

[3]

the particles in liquid are not closely packed allowing movement but particles in solid are vibrating in fixed positions. This is because forces between particles in liquid are less than in a solid.

(iii) Magnesium **gas** completely fills any container it is put in.

Explain why.

[2]

Because gas particles move quickly in all directions, they are far apart/ spread apart there are very weak forces between the particles.

(b) Magnesium reacts with water. Magnesium hydroxide, $Mg(OH)_2$, and hydrogen, H_2, are made.

Write a balanced symbol equation for this reaction.

[2]

$Mg + 2H_2O \rightarrow Mg(OH)_2 + H_2$

(c) Magnesium nitrate has the formula $Mg(NO_3)_2$.

Calculate the relative formula mass of magnesium nitrate.

Mg = 24 N = 14 → 24 + (14 + (16 x 3) x 2

O = 16

Answer = ...148.... ..... [1]

Total Marks for Question Set 23: 9