Oxford Cambridge and RSA

GCSE Chemistry A (Gateway Science)

J248/02 C4-C6 and C7 Foundation (Foundation Tier)

Question Set 14

1 A student added 2.4 g of magnesium to hydrochloric acid. She observed that no magnesium was left when the reaction was complete.

The student transferred the solution to an evaporating basin. She heated the solution using a
Bunsen burner and evaporated all the water.

(a) Explain how you can tell from the student's observation that the hydrochloric acid was in excess.

[1]

(b) Look at the equation for the reaction.

$$Mg + 2HCl \rightarrow MgCl_2 + H_2$$

The student knows the reaction is complete when there is no magnesium left.

Use the equation to explain one **other** way the student could tell that the reaction was complete.

[1]

(c) The student predicts she should make 9.5 g of magnesium chloride, $MgCl_2$.

She actually makes 7.9 g.

Calculate the **percentage yield**.

Give your answer to **3** significant figures.

Answer = ... **[3]**

(d) Write down one reason, other than a mistake, why the student may have obtained a percentage yield of less than 100%.

[1]

Total Marks for Question Set 14: 6