AQA, OCR, Edexcel

GCSE Science

GCSE Chemistry

Yield and atom economy of chemical reactions. Questions

Total Marks: /16

Percentage Yield

Q1: Give three potential reasons, why it is not always possible to obtain the calculated amount of product from a reaction.

1. _____
2. _____
3. _____

(3 marks)

Q2: How is the amount of product produced quantified?

_____

_____

(1 mark)

Q3: Complete the following equation.

$$\%Yield = \frac{\qquad\qquad\qquad\qquad}{\qquad\qquad\qquad\qquad} x\ 100$$

(2 marks)

Q4: Calcium oxide is reacted with water to form calcium hydroxide. If the theoretical yield is 3.0g, but only 1.4g is produced. What is the percentage yield?

_____

_____

_____

(2 marks)

Atom Economy

Q5: What is atom economy?

_____

_____

(1 marks)

Q6: Why is it important to look at atom economy?

_____

_____

(2 marks)

Q7: Complete the equation for how atom economy is calculated.

$$\frac{(Relative\ formula\ mass\ of\ desired\ product\ from\ equation)}{} \ x\ 100$$

(1 mark)

Using concentrations of solutions in mol/dm^3

Q8: If 350g of NaCl is dissolved in water to a final volume of 3dm^3. Calculate the concentration of the solution.

(2 marks)

Use of amount of substance in relation to volume of gases

Q9: Equal amounts of gases in moles occupy the same volume under the same conditions of temperature and pressure. What is the volume of one mole of any gas at room temperature and pressure?

(1 mark)

Q10: Calculate the volume of ammonia that is produced from 300 cm^3 of hydrogen.

$$N_2 + 3H_2 \longrightarrow 2NH_3$$

(1 mark)