



# Quantitative Chemistry

## Multiple Choice Questions

### Set 2

Tick **one** box.

1. What is relative formula mass?

A. the number of protons plus the number of neutrons in the nucleus of an atom

☐

B. the sum of the atomic numbers of the atoms in a compound in the numbers shown in the formula of a compound

☐

C. the sum of the relative atomic masses of the atoms in a compound in the numbers shown in the formula

☐

D. the product of the atomic numbers of the atoms in a compound

☐

2. Sulfuric acid has the formula  $\text{H}_2\text{SO}_4$ . How many atoms of hydrogen are there in sulfuric acid?

A. 1 ☐

B. 2 ☐

C. 4 ☐

D. 7 ☐

3. Which is the correctly balanced symbol equation for the reaction between sodium and chlorine?

A.  $2\text{Na} + \text{Cl} \rightarrow \text{NaCl}$  ☐

B.  $\text{Na}_2 + \text{Cl}_2 \rightarrow 2\text{NaCl}$  ☐

C.  $2\text{Na} + \text{Cl}_2 \rightarrow \text{NaCl}_2$  ☐

D.  $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$  ☐

4. 0.54g of carbon completely reacts with 1.43g of oxygen. How much carbon dioxide would you expect to be produced in the reaction?

A. 0.54g ☐

B. 0.89g ☐

C. 1.97g ☐

D. 2.65g ☐

5. When calcium carbonate and hydrochloric acid react, the mass of the reaction mixture appears to decrease during the reaction. What is the most likely explanation for this?

A. some atoms were lost during the reaction ☐

B. extra atoms from the air were added to the atoms inside the reaction vessel ☐

C. the mass of the substance decreased as it changed state ☐

D. a gas was produced that escaped from the reaction vessel ☐

6. What is the relative formula mass of calcium chloride ( $\text{CaCl}_2$ )?

Relative atomic masses ( $A_r$ ): Ca = 40, Cl = 35.5

A. 75.5 ☐

B. 111 ☐

C. 115.5 ☐

D. 151 ☐

7. Magnesium chloride has the formula  $\text{MgCl}_2$ . What is the percentage by mass of magnesium in magnesium chloride?

Relative atomic mass ( $A_r$ ): Mg = 24

Relative formula mass ( $M_r$ ):  $\text{MgCl}_2 = 95$

A. 0.25% ☐

B. 25% ☐

C. 51% ☐

D. 71% ☐

8. What is the concentration of a solution containing 2.4g of solute dissolved in  $5\text{dm}^3$  of solvent?

A.  $0.48\text{g}/\text{dm}^3$  ☐

B.  $2.1\text{g}/\text{dm}^3$  ☐

C.  $7.4\text{g}/\text{dm}^3$  ☐

D.  $12\text{g}/\text{dm}^3$  ☐

9. A solution has a concentration of  $1.5\text{g}/\text{dm}^3$ . What mass of solute is dissolved in  $0.5\text{dm}^3$  of the solution?

A. 0.3g ☐

B. 0.75g ☐

C. 1.5g ☐

D. 3g ☐

10. A student carried out a chemical reaction and measured the volume of gas produced. They repeated the reaction three times. What is the uncertainty of the student's measurements?

- A.  $\pm 8\text{cm}^3$  ☐
- B.  $\pm 4\text{cm}^3$  ☐
- C.  $\pm 2\text{cm}^3$  ☐
- D.  $\pm 1\text{cm}^3$  ☐

Repeat	Volume of Gas Produced ( $\text{cm}^3$ )
1	65
2	57
3	61