2. Atoms, molecules and stoichiometry

2.1 Relative masses of atoms and molecules

Paper 1

Question Paper

1 What contains the greatest number of the named particles?

A 6.0 dm^3 of argon atoms at room conditions

B 6.0 g of carbon dioxide molecules

C 6.0 g of magnesium atoms

D 6.0 g of water molecules

2 Which pair of formulae is correct?

A Ag_2CO_3 and $(NH_4)_3NO_3$

B K_2HCO_3 and $Zn_3(PO_4)_2$

C $AgHCO_3$ and K_3PO_4

D $ZnCO_3$ and $(NH_4)_2PO_4$

3 How many molecules are present in 62 g of solid white phosphorus, P_4?

A L **B** $2L$ **C** $\frac{L}{2}$ **D** $\frac{L}{4}$

4 Which statement is correct?

A The relative atomic mass of a ^{35}Cl atom is 35.5.

B The relative formula mass of $CaCO_3$ is 100.1.

C The relative isotopic mass of a ^{24}Mg atom is 24.3.

D The relative molecular mass of O_2 is 16.0.

5 Which sample contains the same number of the named species as the number of molecules in 35.5 g of chlorine?

A atoms in 16 g of sulfur

B atoms in 23 g of sodium

C ions in 74.5 g of potassium chloride

D molecules in 88 g of carbon dioxide

6 Which statement is correct?

A Cl has a relative isotopic mass of 35.5.

B Cl_2 has a relative molecular mass of 70.

C ICl has a relative molecular mass of 162.4.

D $NaCl$ has a relative molecular mass of 58.5.