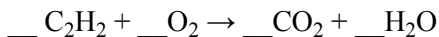


Topic 1 - Stoichiometric Relationships
Practice Problems - Show all work

3. What is the *sum of all coefficients* when the following equation is balanced using the smallest possible whole numbers?



- A. 5
- B. 7
- C. 11
- D. 13

(Total 1 mark)

4. 1.7 g of NaNO_3 ($M_r = 85$) is dissolved in water to prepare 0.20 dm^3 of solution. What is the concentration of the resulting solution in mol dm^{-3} ?

- A. 0.01
- B. 0.1
- C. 0.2
- D. 1.0

(Total 1 mark)

5. How many molecules are present in a drop of ethanol, $\text{C}_2\text{H}_5\text{OH}$, of mass $2.3 \times 10^{-3} \text{ g}$? ($L = 6.0 \times 10^{23} \text{ mol}^{-1}$)

- A. 3.0×10^{19}
- B. 3.0×10^{20}
- C. 6.0×10^{20}
- D. 6.0×10^{26}

(Total 1 mark)

6. Which sample has the greatest mass?

- A. 1 mol of SO_2
- B. 2 mol of N_2O
- C. 2 mol of Ar
- D. 4 mol of NH_3

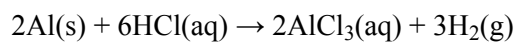
(Total 1 mark)

7. The relative molecular mass of a gas is 56 and its empirical formula is CH₂. What is the molecular formula of the gas?

- A. CH₂
- B. C₂H₄
- C. C₃H₆
- D. C₄H₈

(Total 1 mark)

8. What mass, in g, of hydrogen is formed when 3 mol of aluminium react with excess hydrochloric acid according to the following equation?



- A. 3.0
- B. 4.5
- C. 6.0
- D. 9.0

(Total 1 mark)