



CHOOSE THE CORRECT ANSWER

NO	QUESTION	ANSWER
1	Select the compound in which sulphur has the highest oxidation number	A. SO_2 B. H_2SO_3 C. SCl_2 D. Na_2SO_4
2	Adipic acid, $\text{H}_2\text{C}_6\text{H}_8\text{O}_4$, is produced by a reaction between cyclohexane and excess oxygen. The equation for the reaction is: $2\text{C}_6\text{H}_{12}(\text{l}) + 5\text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{C}_6\text{H}_8\text{O}_4(\text{l}) + 2\text{H}_2\text{O}(\text{l})$ If 45.0 g of cyclohexane is used, calculate the theoretical yield of the adipic acid.	A. 73.8 g C. 75.8 g B. 83.7 g D. 78.3g
3	The oxidation number of vanadium atom in $(\text{NH}_4)_3\text{VO}_4$ is	A. +3 B. +4 C. +5 D. +7
4	A 72.0 g vanadium pentoxide, V_2O_5 , reacts with excess aluminium, Al at high temperature to produce vanadium metal, and aluminium oxide, Al_2O_3 . Calculate the mass vanadium produced. [Ar V: 51]	A. 4.04 g C. 44.0 g B. 40.4 g D. 4.40 g
5	Antimony can react with chlorine gas to give antimony trichloride. $__\text{Sb}(\text{s}) + __\text{Cl}_2(\text{g}) \longrightarrow __\text{SbCl}_3(\text{l})$ Which of the following is the most correct set of stoichiometric coefficients to balance this equation?	A. 1, 1, 1 B. 4, 6, 4 C. 1, 3, 2 D. 2, 3, 2

CHEMBUDDY CHAPTER 1

1.3 STOICHIOMETRY

6	In an experiment, 1.46 g of magnesium is added into 160.00 mL of 0.50 mol L⁻¹ hydrochloric acid. The reaction involved is: $\text{Mg(s)} + 2\text{HCl(aq)} \rightarrow \text{MgCl}_2\text{(aq)} + \text{H}_2\text{(g)}$ Determine the limiting reactant.	A. Mg(s) C. MgCl₂ (aq) B. HCl (aq) D. H₂(g)
7	Given equations below: $\text{S}_2\text{O}_8^{2-} + 2\text{e}^- \rightarrow 2\text{SO}_4^{2-}$ $\text{Mn}^{2+} + 4\text{H}_2\text{O} \rightarrow \text{MnO}_4^- + 8\text{H}^+ + 5\text{e}^-$ How many mole of S₂O₈²⁻ are needed to oxidise 20mL, 0.2 M Mn²⁺?	A. 4x10⁻³ mol C. 1x10⁻² mol B. 1x10⁻³ mol D. 2x10⁻² mol
8	In an experiment, 30g aluminium reacts with 100g Br₂ to form aluminium bromide, AlBr₃. What is the percentage yield for the reaction if only 55g of AlBr₃ were produced at the end of the experiment?	A. 18.57 % C. 49.45% B. 20.22% D. 42.30%
9	A 25 mL solution containing C₂O₄²⁻ ions was titrated with KMnO₄ in acidic medium as follow: $5\text{C}_2\text{O}_4^{2-} + 2\text{MnO}_4^- + 16\text{H}^+ \rightarrow 2\text{Mn}^{2+} + 8\text{H}_2\text{O} + 10\text{CO}_2$ Calculate the concentration of C₂O₄²⁻ ions if the titration required 30.50 mL of 1.25 M KMnO₄ solution.	A. 3.81 M C. 4.23 M B. 3.32 M D. 4.78 M
10	The reaction between sulphuric acid, H₂SO₄ and barium hydroxide, Ba(OH)₂ is shown below $\text{H}_2\text{SO}_4 + \text{Ba(OH)}_2 \rightarrow \text{BaSO}_4 + 2\text{H}_2\text{O}$ Calculate the mass of Ba(OH)₂ required to produce 4.35g BaSO₄, if the percentage yield of the reaction is 85%.	A. 3.75 g C. 3.48 g B. 6.97 g D. 5.12 g

