

Chemistry

Standard level

Paper 1B

Markscheme

Question	Answers	Total
1 (a)	A strong base and B weak base ✓ Strong bases completely ionised and higher concentration of mobile ions ✓	2
1 (b) (i)	A: 1×10^{-14} ✓ C: 1×10^{-5} ✓	2
1 (b) (ii)	1×10^9 ✓	1
1 (c) (i)	D: faster rate of reaction ✓ C: slower rate of reaction ✓	2
1 (c) (ii)	C: weak acid and pH 5 ✓ D: Strong acid and pH 1 ✓	2
1 (c) (iii)	Bases do not react with metals ✓	1
2 (a)	Different sized atoms ✓ Prevent layers from sliding easily ✓	2
2 (b)	$+2 \rightarrow +1$ ✓ Reducing agent I^- ✓	2
2 (c) (i)	$n(S_2O_3^{2-}) = 0.0315 \text{ mol}$ ✓	1
2 (c) (ii)	$Cu:S_2O_3^{2-} = 1:4$ ✓	1
2 (c) (iii)	$(0.0315 / 4) \times 63.55 = 0.500 \text{ g}$ ✓	2
2 (c) (iv)	$(0.500 / 0.750) \times 100 = 66.7 \% \text{ Cu}$ ✓ $33.3 \% \text{ Zn}$ ✓	2

3 (a)	$C_nH_{2n+1}OH$ ✓	1
3 (b)	Increase in molar mass ✓ Stronger London dispersion forces between molecules ✓	2
3 (c)	Increasing length of non-polar hydrocarbon chain ✓	1
3 (d)	Higher boiling point ✓ Lower solubility ✓	2