

Question	Marking guidance	Mark	AO	Comments
05.1	$2\text{NaBr} + 2\text{H}_2\text{SO}_4 \longrightarrow \text{Na}_2\text{SO}_4 + \text{Br}_2 + \text{SO}_2 + 2\text{H}_2\text{O}$	1	AO1a	Allow ionic equation $2\text{Br}^- + 2\text{H}_2\text{SO}_4 \longrightarrow \text{Br}_2 + \text{SO}_4^{2-} + \text{SO}_2 + 2\text{H}_2\text{O}$
	Br^- ions are bigger than Cl^- ions	1	AO2c	
	Therefore Br^- ions more easily oxidised / lose an electron more easily (than Cl^- ions)	1	AO2c	

05.2	This question is marked using levels of response. Refer to the Mark Scheme Instructions for Examiners for guidance on how to mark this question.		6	2 AO1a 4 AO3 2b	Indicative chemistry content Stage 1: formation of precipitates • Add silver nitrate • to form precipitates of AgCl and AgBr • $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$ • $\text{AgNO}_3 + \text{NaBr} \rightarrow \text{AgBr} + \text{NaNO}_3$ Stage 2: selective dissolving of AgCl • Add excess of dilute ammonia to the mixture of precipitates • the silver chloride precipitate dissolves • $\text{AgCl} + 2\text{NH}_3 \rightarrow \text{Ag}(\text{NH}_3)_2^+ + \text{Cl}^-$ Stage 3: separation and purification of AgBr • Filter off the remaining silver bromide precipitate • Wash to remove soluble compounds • Dry to remove water
Level 3 5–6 marks	All stages are covered and the explanation of each stage is generally correct and virtually complete. Stages 1 and 2 are supported by correct equations. Answer communicates the whole process coherently and shows a logical progression from stage 1 to stage 2 and then stage 3. The steps in stage 3 are in a logical order.				
Level 2 3–4 marks	All stages are covered but the explanation of each stage may be incomplete or may contain inaccuracies OR two stages are covered and the explanations are generally correct and virtually complete. Answer is mainly coherent and shows a progression through the stages. Some steps in each stage may be out of order and incomplete.				
Level 1 1–2 marks	Two stages are covered but the explanation of each stage may be incomplete or may contain inaccuracies, OR only one stage is covered but the explanation is generally correct and virtually complete. Answer includes some isolated statements, but these are not presented in a logical order or show confused reasoning.				
Level 0 0 marks	Insufficient correct chemistry to warrant a mark.				

05.3	$\text{Cl}_2 + 2\text{HO}^- \longrightarrow \text{OCl}^- + \text{Cl}^- + \text{H}_2\text{O}$	1	AO1a	Both required for the mark
	OCl^- is +1 Cl^- is -1	1	AO2b	