

Question	Part	Sub Part	Marking Guidance	Mark	Comments
1	(a)		Alternative route	1	Allow mechanism outlined allow forms intermediate species
			Lower activation energy	1	
1	(b)		Variable oxidation state	1	allow changes oxidation states
1	(c)	(i)	$\text{SO}_2 + \text{V}_2\text{O}_5 \rightarrow \text{SO}_3 + \text{V}_2\text{O}_4$	1	allow 2VO_2 instead of V_2O_4
			$\text{O}_2 + 2\text{V}_2\text{O}_4 \rightarrow 2\text{V}_2\text{O}_5$	1	
1	(c)	(ii)	Poison attaches to surface	1	Allow blocks active site/surface Decreases surface area
1	(c)	(iii)	Purify reactants	1	Allow remove impurities