

Question	Answers	Mark	Additional Comments/Guidance
05.1	$\Delta S = \sum S_{\text{products}} - \sum S_{\text{reactants}}$ $253 + (2 \times 198) - (2 \times 223 + 2 \times 5.7 + 50.2) (= 649 - 507.6)$ $\Delta S = 141(.4) \text{ (J K}^{-1}\text{mol}^{-1}\text{)}$ $\Delta G = \Delta H - T\Delta S$ $\Delta G = -60 - (1262 \times 141(.4) \times 10^{-3})$ $= -238 \text{ (kJ mol}^{-1}\text{) to 3 sig figs}$ <p>feasible since ΔG is negative/less than zero</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>This expression could also score M1</p> <p>This scores M1 and M2 Allow ecf for M3, M4 and M5 from incorrect M2</p> <p>This expression also scores M3. For M4, allow $\Delta G = -60 - (1262 \times \text{their M2} \times 10^{-3})$</p> <p><u>If calculated in joules</u> M4: Allow $\Delta G = -60 \times 10^3 - (1262 \times 141(.4))$ M5: Allow <u>-238 000</u> J mol⁻¹ providing units shown</p> <p>Allow consequential M6 from their ΔG</p>
Total		6	