

Numerical Answers to Tutorial Sheet 4

- 1 a (i) $+17.0 \text{ JK}^{-1}$
 (ii) $+35.6 \text{ JK}^{-1}$
- b (i) $63.88 \text{ JK}^{-1}\text{mol}^{-1}$
 (ii) $66.08 \text{ J K}^{-1}\text{mol}^{-1}$
- d (i) $46.60 \text{ J K}^{-1}\text{mol}^{-1}$
 (ii) $46.73 \text{ J K}^{-1}\text{mol}^{-1}$
- 2 a(iii) at 298K : $\Delta_r H^\circ = -92.2 \text{ kJ mol}^{-1}$
 $\Delta_r S^\circ = -198.762 \text{ JK}^{-1}\text{mol}^{-1}$
 $\Delta_f G^\circ = -16.5 \text{ kJ mol}^{-1}$
- at 698K : $\Delta_r H^\circ = -110.39 \text{ kJ mol}^{-1}$
 $\Delta_r S^\circ = -237.47 \text{ J K}^{-1}\text{mol}^{-1}$
 $\Delta_f G^\circ = -27.6 \text{ kJ mol}^{-1}$