

Numerical Answers to Tutorial Sheet 5

- 1
- (a) -49.8kJmol^{-1}
 - (b) -197kJmol^{-1}
 - (c) (i) -93.05kJmol^{-1}
(ii) -86.2kJmol^{-1}
 - (d) (i) (a) $-386.1\text{JK}^{-1}\text{mol}^{-1}$
(b) $+92.6\text{JK}^{-1}\text{mol}^{-1}$
(c) $-153.1\text{JK}^{-1}\text{mol}^{-1}$
(ii) (a) -521.5kJmol^{-1}
(b) $+25.8\text{kJmol}^{-1}$
(c) -178.7kJmol^{-1}
(iii) (a) -522.1kJmol^{-1}
(b) $+25.78\text{kJmol}^{-1}$
(c) -178.6kJmol^{-1}
 - (e) (i) (a) $-21.0\text{JK}^{-1}\text{mol}^{-1}$
(b) $512.0\text{Jk}^{-1}\text{mol}^{-1}$
(ii) (a) -212.40kJmol^{-1}
(b) -5798kJmol^{-1}
(iii) (a) -212.55kJmol^{-1}
(b) -5798kJmol^{-1}
 - (f) (i) -50kJmol^{-1}
(ii) -197kJmol^{-1}
- 2
- (a) -3.8J
 - (b) -36.5JK^{-1}
 - (c) 10.4kJ
 - (d) (i) 15.7atm
(ii) $+8.25\text{kJ}$
 - (e) 10kJ
 - (f) (i) 817.90kJmol^{-1}
(ii) 2108.11kJmol^{-1}
 - (g) -160.07kJmol^{-1}
 - (h) (i) -0.11kJmol^{-1}
(ii) -0.11kJmol^{-1}
 - (i) (i) $76.9\text{JK}^{-1}\text{mol}^{-1}$
(ii) $96.864\text{JK}^{-1}\text{mol}^{-1}$
 - (j) 57.2kJmol^{-1}
 85.6kJmol^{-1}
 112.8kJmol^{-1}
 - (k) (i) 5.8JK^{-1}
 -1.7kJ
(ii) -1.7JK^{-1}

- (1) (i) $-3.46 \times 10^3 \text{ J}$
(ii) constant
(iii) -3.46 kJ
(iv) $2.40 \times 10^4 \text{ J}$
(v) $2.75 \times 10^4 \text{ J}$
(vi) -11.5 JK^{-1}
(vii) $+3.46 \text{ kJ}$
(viii) 3.46 kJ
(ix) -39.2 JK^{-1}
- 3 (a) (i) -501 kJmol^{-1}
(ii) $+7 \text{ kJmol}^{-1}$
 $+107 \text{ kJmol}^{-1}$
(b) -27 kJmol^{-1}
(c) 57.2 kJmol^{-1}
 89.6 kJmol^{-1}
 112.8 kJmol^{-1}
- 4 $-225.31 \text{ kJmol}^{-1}$