

11/17/23

chapter 9

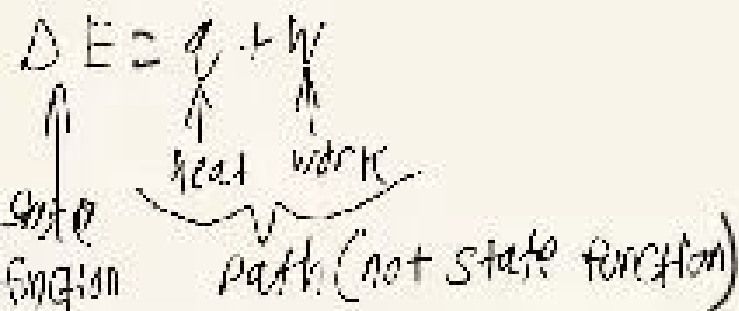
oxidation states:

$$\begin{array}{ll} F = -1 & Cl = -1 \\ H = +1 & S = -2 \\ O = -2 & N = -3 \end{array}$$

- if losing electron it's oxidizing and becoming the reducing agent.

- if gaining electron it's reducing and becoming the oxidation agent.

$$\Delta E_{sys} = -\Delta E_{sur}$$



If capital letter it's a state function.

4/17/23

chapter 9

heat capacity:

$$q = mC_s \Delta T; \text{ J/g}^\circ\text{C or J/gK}$$

$$T_{^\circ\text{C}} = T_{\text{K}} - 273.15$$

$$C_s(\text{H}_2\text{O}) = 4.18 \text{ J/gK}$$

$$\Delta T = T_f - T_i$$

thermal equilibrium:

A + B: different T_i ; same T_f

$$q_A = -q_B$$

11/10/23

Chapter 10

Gases/ideal gasses:

T = temperature (use kelvin)

V = volume (L)

n = number of gas particles (moles)

P = pressure (atm)

These all depend on each other. State of gas defined by the unique combination.

Pressure:

Pressure is a force applied over an area

$$P = \frac{F}{A}$$

↳ constant P means constant $\left(\frac{F}{A}\right)$

ideal gas Law:

$$P = \frac{n}{V} RT \quad / \quad PV = nRT$$

$$0.08205 \frac{\text{atm} \cdot \text{L}}{\text{K} \cdot \text{mol}}$$

(use this)