

Ch. 19.4: Spontaneity of Redox Reactions

**Homework #19-3:** Problems pg. 833 #20, 21, 22, 23 (a&c), 24 (a&c), 25

21  $K = 3 \times 10^{54}$

22  $E^\circ = 0.368 \text{ V}$

23 (a)  $K = 2 \times 10^{18}$

(c)  $K = 3 \times 10^{62}$

24 (a)  $K = 5 \times 10^{75}$

(c)  $K = 1 \times 10^{31}$

(d)  $K = 8 \times 10^{211}$

25  $\Delta G^\circ = -81 \text{ kJ / mol}$

$K_c = 2 \times 10^{14}$