3 100 grades
Median 91

Chemistry – 4311
November 20, 2015

Exam #3 **Name** Key

(20) 1. Matching (use a letter only once)

ΔG_r° equals a .

At equilibrium j is zero.

ΔG_r and ΔG_r° are related according to h .

The membrane potential for K^+ ions is n .

The relationship between the equilibrium constant and ΔH_r° is given by c .

The Nernst equation is d .

In an electrochemical cell oxidation takes place at the k .

The relationship between ΔG_r and the electrochemical potential is b .

For the reaction $O_2(g) + 4H^+ + 4e^- \rightarrow 2H_2O$ decreasing $[H^+]$ will r E.

t is one reason $\Delta G_r^{\circ\prime}$ for ATP hydrolysis is negative.

a. $-RT\ln K$

b. $\Delta G_r = -\nu FE$

c. $\ln K = -\Delta H_r^\circ/RT + C$

d. $E = E^\circ - (RT/\nu F)\ln Q$

e. increase

f. weak hydrogen bonds

g. ΔG_r°

h. $\Delta G_r = \Delta G_r^\circ + RT\ln Q$

i. $E^\circ - 0.0257\ V\ \ln[K^+]$

j. ΔG_r

k. anode

l. $\Delta G_r = \Delta G_r^\circ + RT\ln K$

m. $\Delta G_r = \nu F/E$

n. $0.0257\ V\ \ln\{[K^+]_{ex}/[K^+]_{in}\}$

o. $E^\circ = (RT/\nu F)\ln Q$

p. $-RT\ln Q$

q. cathode

r. decrease

s. $K = -\Delta H_r^\circ/RT + C$

t. electrostatic repulsion

$c = 3.00 \times 10^8$ m/s

$F = 96{,}500$ coulombs

$h = 6.626 \times 10^{-34}$ J s

$R = 8.314$ J/mol-K

$R = 1.987$ cal/mol-K

$R = 0.08206$ L-atm/mol-K

$N_A = 6.02 \times 10^{23}$

1 atm = 101.325 kPa

$k_B = 1.381 \times 10^{-23}$ J/K