

Exam #2

Name Key

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

The thermodynamic definition of entropy is that dS equals e.

For an increase in entropy there is a (an) g in disorder.

The Gibbs energy G equals c.

For a spontaneous process at constant T and P , ΔG is r.

For an equilibrium between a liquid and vapor, the change in the vapor pressure with temperature is o.

The chemical potential is the partial molar i.

For an ideal liquid or gas mixture, h,l is zero.

Raoult's Law is f.

Protein unfolding is an p process.

In solution, the entropy of Cl^- is t than that of I^- .

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

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

$$R = 8.314 \text{ J/mol-K}$$

$$R = 1.987 \text{ cal/mol-K}$$

$$R = 0.08206 \text{ L-atm/mol-K}$$

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

$$1 \text{ atm} = 101.325 \text{ kPa}$$

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

a. $P = nRT/V$

b. ΔS_{mix}

c. $H - TS$

d. greater

e. dq_{rev}/T

f. $P_1 = x_1 P_1^*$

g. decrease

h. ΔH_{mix}

i. Gibbs energy

j. Tdq_{rev}

k. $P_1 = P_1^*/x_1$

l. enthalpy

m. positive

n. exothermic

o. $\ln P = -\Delta H_{\text{vap}}/RT + C$

p. endothermic

q. increase

r. negative

s. $H + TS$

t. less

