

Chemistry-4311
October 11, 2013

Quiz #5

Name Key

$R = 8.314 \text{ J/mol-K} = 0.08206 \text{ L-atm/mol-K} = 1.987 \text{ cal/mol-K}$, $N_A = 6.02 \times 10^{23}$

1. Matching (Use a letter only once)

The entropy of liquid water is e than that of ice.

$\Delta S_{\text{universe}}$ is a for all spontaneous processes.

For a reversible process and only P,V work, $dG =$ j.

At the d point the solid, liquid, and vapor phases are in equilibrium.

For equilibrium between two phases, their molar f are equal.

- a. positive
- b. entropies
- c. negative
- d. triple
- e. higher
- f. Gibbs energies
- g. dH
- h. critical
- i. lower
- j. $VdP - SdT$

2. Enter positive or negative for the following:

(a) The entropy change of protein unfolding is positive.

(b) The enthalpy change of protein unfolding is positive.

3. Draw the phase diagram for H_2O versus P and T. Identify the solid, liquid, and vapor phases; and the critical and triple points. Show that the solid changes to liquid if the pressure is increased.

