CHE 112 - Homework - Ch 12d
Colligative Properties - Part I

Name: _____ Date: _____

1. Define the term 'Colligative Property'. What are the four properties and how are they effected?

2. There is some chemistry in colligative properties. What 2 properties of solutes must we take into account when calculating colligative properties? Explain.

3. What happens (explain using words, a figure, and an equation) to the vapor pressure of a pure liquid when:

   3(a) A non-volatile solute is added?

   3(b) A volatile solute is added?

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4. What is the vapor pressure (in mm Hg) of a solution of 16.0 g of glucose ($C_6H_{12}O_6$, considered non-volatile) in 80.0 g of methanol (CH_3OH) at 27°C? The vapor pressure of pure methanol at 27°C is 140 mm Hg

5. At 25°C the vapor pressure of $CHCl_3$ is 205 mm Hg, and the vapor pressure of CH_2Cl_2 is 415 mm Hg. What is the vapor pressure of a mixture of 15.0 g of $CHCl_3$ and 37.5 g of CH_2Cl_2 assuming both are volatile substances?

6. Explain the decrease in vapor pressure of a pure solvent when a solute is added in terms thermodynamics. (ie ΔG, ΔH, and ΔS).