Chemistry 141 Name

Dr. Cary Willard

Quiz 11a (20 points) November 28, 2012

All work must be shown to receive credit. Give answer to correct number of significant figures. π=iMRT, ΔTf=ikfm, ΔTb=ikbm, R=0.0821 L atm/mol K=62.4 L torr/mol K

1. (15 points) A 4.23 M solution of sodium chloride in water has a density of 1.28 g/mL
   1. Calculate the mass percent sodium chloride in the solution.
   2. Calculate the molality of sodium chloride in the solution.
   3. Calculate the osmotic pressure of the solution at 25oC.

Remember that NaCl dissociates to give 2 ions per mol so i = 2.

1. (5 points) An aqueous solution containing 21.8 g of an unknown molecular compound in 100.0 g of water was found to have a freezing point of -1.42oC. Calculate the molar mass of the unknown compound. (Kf for water is 1.86oC/m)

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Quiz 11b (20 points) November 28, 2012

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1. (15 points) A 3.28 M solution of sodium chloride in water has a density of 1.22 g/mL
   1. Calculate the mass percent sodium chloride in the solution.
   2. Calculate the molality of sodium chloride in the solution.
   3. Calculate the osmotic pressure of the solution at 25oC.

Remember that NaCl dissociates to give 2 ions per mol so i = 2.

1. (5 points) An aqueous solution containing 48.8 g of an unknown molecular compound in 100.0 g of water was found to have a freezing point of -2.12oC. Calculate the molar mass of the unknown compound. (Kf for water is 1.86oC/m)