13) 50g 1.5L, 0.110M $(NH_4)_2SO_4$

$\frac{0.110 \text{ moles } (NH_4)_2SO_4}{1 \text{ L soln}}$

— g

$\frac{0.110 \text{ mol } (NH_4)_2SO_4}{1 \text{ L}} \left| 1.5 \text{ L} \right| \frac{132 \text{ g } (NH_4)_2SO_4}{1 \text{ mol } (NH_4)_2SO_4} =$

$6 M = \frac{6 \text{ moles}}{1 \text{ L}}$

Jan 6-7:30 AM

14) Vit C $C_6H_8O_6$

80.5g $C_6H_8O_6$

210 g $H_2O$

290.5 g TOTAL

$\frac{1.22 \text{ g}}{\text{mL}}$ @ 55°C

$\frac{1 \text{ mL}}{1.22 \text{ g}} \left| 290.5 \text{ g} \right| = \text{mL}$

$m = \frac{\text{moles Vit C}}{\text{kg } H_2O} = \frac{}{0.2905 \text{ kg}}$

1) $M = \frac{\text{moles Vit C}}{\text{L soln}}$

Jan 6-7:57 AM

## Colligative Prop

If add solute to solvent:

1. FP ↓
2. BP ↑
3. Pressure (Osmotic) $\Pi$ ↑
4. Viscosity ↑
5. C.B. $\ominus\Delta$ -> still crazy.

Jan 6-8:05 AM

## How much will the BP↑, FP↓.

$$\Delta T = (K * m)i$$

$K = \frac{\Delta T}{M}$

- $\Delta T$: Change in Temp.
- $K$: Constant ($K_b$, $K_f$)
- $m$: Molality = Moles solute / kg solvent ($\frac{g}{MW}$)
- $i$: Van't Hoff factor = # ions in soln

BP + $\Delta T$

FP − $\Delta T$

Jan 6-8:09 AM

100g $H_2O$ 5g NaCl $i=2$ New BP/FP at STP

$K_b = 0.52\ ^\circ C/m$

$K_f = 1.86\ \frac{^\circ C}{m}$

$\Delta T = (K_b * m)i$

$m = \frac{\text{Moles } NaCl}{Kg\ H_2O} = \frac{\frac{5}{58}}{0.1} = 0.86\ m$

$\Delta T = (0.52 * 0.86)2 = 0.9$

New BP: 100.9°C

$\Delta T = (K_f * m)i$

$= (1.86 * 0.86)2$

$= 3.2$

New FP: -3.2°C

Jan 6-8:12 AM

111.2mg ASA. m 0.358 L $H_2O$

$C_9H_8O_4$ Calc $\Pi$ AKA P.

$PV = nRT$

Jan 6-8:24 AM

13 / 70a, 76

PS13# 1, 2, 4 => 6

Jan 6-8:27 AM