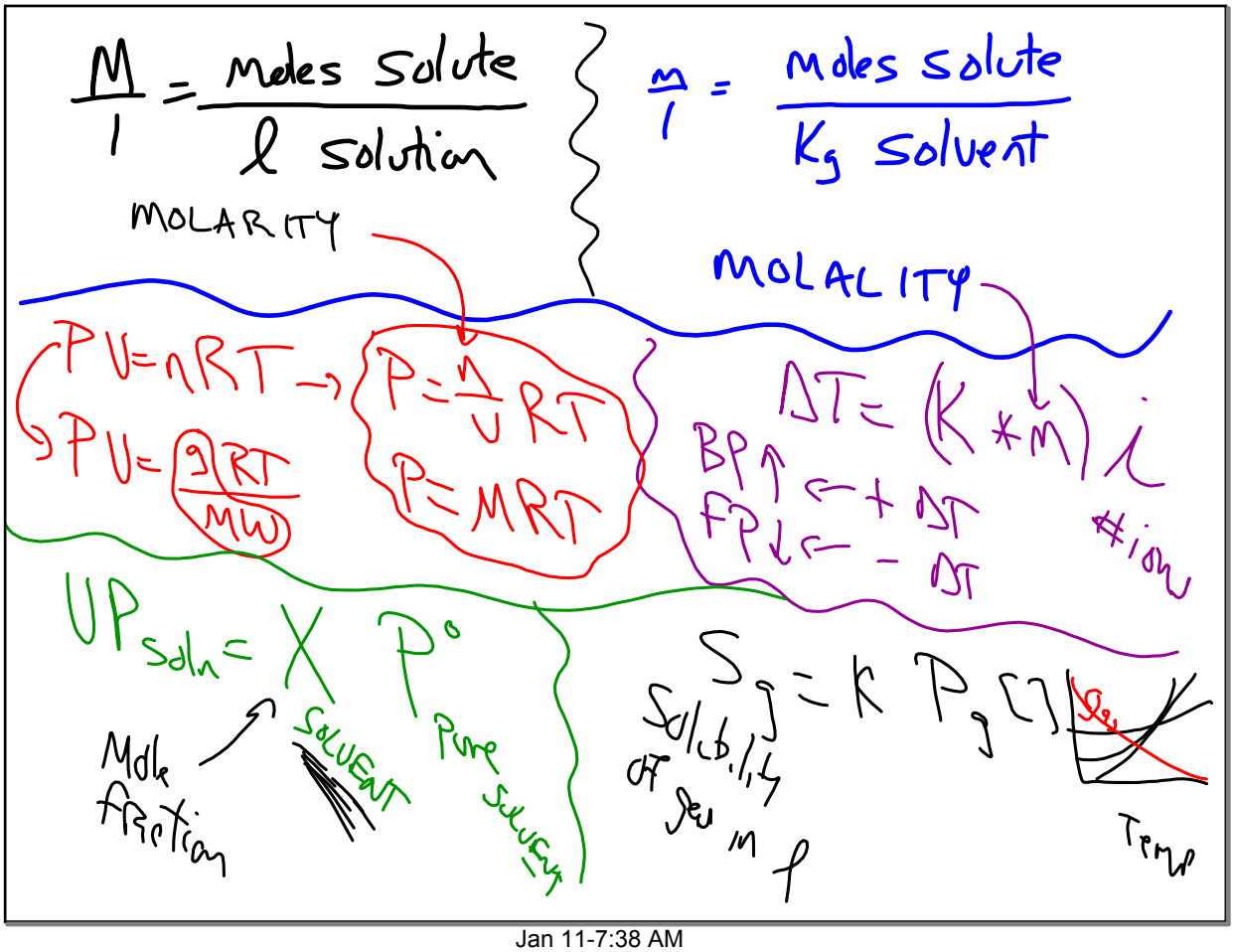


Jan 11-7:38 AM

PSB

(5) $X_{meth} = \dfrac{\text{Moles meth}}{\text{Moles meth} + \text{mole } H_2O}$

Soln: 32g meth, 32g $H_2O$

$= \dfrac{1}{\left(1 + \frac{32}{18}\right)}$

Jan 11-7:57 AM

13-(2)

$CaCl_2 \rightarrow Ca^{+2} + 2Cl^-$

$x$ M $\rightarrow$ $2x$ M

Jan 11-8:01 AM

(9)

$X_{glucose} = 0.2$

$X_{glucose} = \frac{2}{10}$

$X_{glucose} = \frac{\text{Moles glucose}}{\text{Moles glucose} + \text{Mole water}} = \frac{2}{10}$

$2 + 8 =$

$M_{glucose} = \frac{\text{Mole glucose}}{\text{Kg water}}$

$= \frac{2 \text{ mole gluc.}}{0.144 \text{ Kg } H_2O}$

$= 13.9 \text{ M}$

$\frac{8 \text{ mole } H_2O}{1 \text{ mole } H_2O} \left| \frac{18 \text{ g } H_2O}{1 \text{ mole } H_2O} \right| \frac{1 \text{ Kg}}{1000 \text{ g}} = 0.144 \text{ Kg } H_2O$

Jan 11-8:11 AM

(13) $1_{m\ glucose}$ BP = 100.51°C  nBP = 100°C  ΔT = 0.51

ΔT BP $1_m$ $Al_2(SO_4)_3$  $i = 5$

$\Delta T_b = (K_b * m)\, i$

$0.51 = ((K_b \quad 1)\ 1$  glucose

$*5$ ↓ 2.5  $*5$ ↓ 5 $Al_2(SO_4)_3$

Jan 11-8:21 AM

(14) 125mg Caffeine + 100g cyclohexane

MW = ?  grams / mole

$K_f = 20.1\ °C/m$  ΔT = 0.13 K = 0.13°C

(2) $\frac{0.0065\ \text{mole caff}}{1\ \text{Kg cyclohex}} \left|\frac{0.1\ \text{Kg cyclohex}}{}\right. = 0.00065$ mole caff.

(1) $\Delta T_f = (K_f * m)\, i$

$0.13 = (20.1 * m)\ 1$  coefficient

$m = \frac{0.0065\ \text{moles caff.}}{\text{Kg cyclohex}}$

(3) $\frac{g}{\text{Mole}} = \frac{0.125\ g}{0.0006\ \text{mole}} = 192.3\ g/\text{mole}$

$\frac{g}{\text{Mole}} = g * \text{Mole}^{-1}$  for Bobby K

$m = \frac{\text{caff moles}}{\text{Kg cyclohex}} = \frac{\frac{g}{MW}}{\text{Kg}}$

FORMULA ⇒  $\frac{0.0065}{1} = \frac{\frac{0.125}{MW}}{0.1}$

Jan 11-8:35 AM

(16) 0.25 g Cytc , 50ml soln

P = 1.52 KPa T = 25°C

Find MW Cytc

$PV = nRT$

$PV = \frac{gRT}{MW}$

$\frac{MW}{1} = \frac{gRT}{PV}$

$\frac{(0.25\,g)(0.08206)(298\,^{\circ}K)}{(0.015\,g_m)(0.05\,l)}$

Jan 11-8:56 AM

(19) Same as #5

EG = 62 g/mole

$H_2O$ = 18 g/mole

$X_{EG} = \frac{\text{Mole EG}}{\text{Mole EG} + \text{Mole } H_2O}$

$X_{EG} = \frac{1}{1 + \frac{62}{18}}$

(62 g)

$\frac{62\,g\,H_2O}{18\,g\,H_2O} \left| \frac{1\,mole\,H_2O}{} \right.$

Jan 11-8:58 AM

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

| | | |
|---|---|---|
| a | $KI$ | 2 |
| b | $Ca^{+2}(SO_4)^{-2}$ | 2 |
| c | glucose | 1 |
| * d | $Na_2^{+1}SO_4^{-2}$ | 3 |
| e | EG | 1 |

Jan 11-9:07 AM

(20) $X_{Bz} = 0.65$ at 25°C

$P^{\circ}_{pure\ Bz} = 94.6$ torr

$X_{TOL} = 0.35$

$P^{\circ}_{TOL} = 29.1$ torr

$P_T = P_{Bz} + P_{TOL}$

$P_{mix} = X_{Bz} P_{pure\ Bz}$

$= 0.65\,(94.6)$

61.5 torr

$P_{mix} = X_{TOL} P_{pure\ TOL}$

$= 0.35\,(29.1)$

10.2 torr

71.7 torr Total

Jan 11-9:09 AM

(21) 6 M glucose

$$\frac{6 \text{ moles glucose}}{1 \text{ kg water}}$$

$$\frac{1000 \text{ g } H_2O}{18 \text{ g } H_2O} \left| \frac{\text{mole } H_2O}{} \right. = 55.6 \text{ mole}$$

$$X = \frac{\text{mole } H_2O}{\text{mole } H_2O + \text{mole glu.}}$$

$$X = \frac{55.6}{55.6 + 6}$$

Jan 11-9:14 AM