P1

a) $\cdot n_A = \frac{m_A}{PM_A} = \frac{5{,}2\ [gr]}{3PM_B\ [gr/mol]} = \frac{1{,}733}{PM_B}\ [moles]$

$\cdot n_B = \frac{m_B}{PM_B} = \frac{6{,}5\ [gr]}{PM_B\ [gr/mol]} = \frac{6{,}5}{PM_B}\ [moles]$

$\cdot n_T = n_A + n_B = \frac{1{,}733 + 6{,}5}{PM_B} = \frac{8{,}233}{PM_B}\ [moles]$

$\Rightarrow X_A = \frac{n_A}{n_T} = \frac{\left(\frac{1{,}733}{PM_B}\right)}{\left(\frac{8{,}233}{PM_B}\right)} = \boxed{0{,}211 = X_A}$

$\Rightarrow X_B = 1 - X_A = 1 - 0{,}211 = \boxed{0{,}789 = X_B}$

· Luego por Raoult y dalton:

· $P_T = P_A + P_B$

· $P_i = X \cdot P_i^\circ$

$\Rightarrow P_T = X_A P_A^\circ + X_B P_B^\circ \ / \ P_A^\circ \to \emptyset$

$\Rightarrow \boxed{P_T = 0{,}211 \cdot 150 = 118{,}42\ [mmHg]}$ //

b) $P_T = P_B^\circ \cdot X_B + P_C^\circ \cdot X_C$

$\Rightarrow P_T = 150 \cdot X_B + 90 \cdot X_C \ / \ X_B + X_C = 1 \Rightarrow X_B = 1 - X_C$

$\Rightarrow P_T = 150(1 - X_C) + 90 X_C \ / \ P_T = P_{T(a)} = 118{,}42$

$\therefore \boxed{X_C = 0{,}526}$

- Luego, como:

$$X_c = \frac{n_c}{n_T} = \frac{m_c/PM_c}{m_c/PM_c + m_B/PM_B}$$

$$\Rightarrow 0,526 = \frac{m_c/80}{m_c/80 + 6,5/60}$$

$$\therefore \boxed{m_c = 9,63\ [g]} \quad //$$

P2

Calculamos P°_{vapor} a 30°C

- $\log_{10} P_B^\circ = 6{,}906 - \frac{1211}{30+220{,}8} \Rightarrow P_B^\circ = 119{,}52\ [\text{torr}]$

- $\log_{10} P_T^\circ = 6{,}9533 - \frac{1343{,}9}{30+219{,}38} \Rightarrow P_T^\circ = 36{,}67\ [\text{torr}]$

- equimolar $\Rightarrow n_B = n_T \Rightarrow X_B = X_T = \frac{1}{2}$

- Raoult $\Rightarrow P_i = X_i P_i^\circ \Rightarrow P_B = 0{,}5 \cdot 119{,}52 = 59{,}76\ [\text{torr}]$

  $P_T = 0{,}5 \cdot 36{,}67 = 18{,}335\ [\text{torr}]$

- Luego como $P_T = \Sigma P_i \Rightarrow P_{TOTAL} = P_B + P_T = 59{,}76 + 18{,}335$

  $\therefore \boxed{P_{TOTAL} = 78{,}095\ [\text{torr}]}$ //

- Dalton $\Rightarrow P_i = y_i \cdot P_t \Rightarrow y_i = P_i / P_t$

  $\Rightarrow y_B = \frac{P_B}{P_{TOTAL}} = \frac{59{,}76}{78{,}095} = \boxed{0{,}765}$ // ; $y_T + y_B = 1 \Rightarrow y_T = 1 - 0{,}765$

  $\therefore \boxed{y_T = 0{,}235}$ //