Correction

Ex I

① a/ $HCl + H_2O \longrightarrow H_3O^+ + Cl^-$

b/ $\sigma_1 = \lambda_{H_3O^+}[H_3O^+] + \lambda_{Cl^-}[Cl^-]$

c/ on a $[H_3O^+] = [Cl^-] \Rightarrow \sigma_1 = (\lambda_{H_3O^+} + \lambda_{Cl^-})[H_3O^+] \Rightarrow [H_3O^+] = \dfrac{\sigma_1}{\lambda_{H_3O^+} + \lambda_{Cl^-}}$

$[H_3O^+] = [Cl^-] = 0,01\ 10^3\ mol/m^3 = 10^{-2}\ mol/l$

d/ puisque $[H_3O^+] = C_1 \Rightarrow$ la réaction est totale.

② a/ $CH_3COOH + H_2O \longrightarrow CH_3COO^- + H_3O^+$

b/ $\sigma_2 = \lambda_{H_3O^+}[H_3O^+] + \lambda_{CH_3COO^-}[CH_3COO^-]$ avec $[H_3O^+] = [CH_3COO^-]$

c/ $[H_3O^+] = \dfrac{\sigma_2}{\lambda_{H_3O^+} + \lambda_{CH_3COO^-}} = 0,4\ mol/m^3 = 0,4\ 10^{-3}\ mol/l$

d/ $[H_3O^+] < C_2 \Rightarrow$ la réaction n'est pas totale.

Ex II

Na^+ est un ion indifférent sa concentration reste constante $[Na^+] = \dfrac{n_2}{V}$

1/

	$HCOOH$	+ CH_3COO^-	$\longrightarrow$ $HCOO^-$	+ CH_3COOH
2/ E.I	n_1	n_2	0	0
E.F	$n_1 - x_f$	$n_2 - x_f$	x_f	x_f

3/ $[HCOO^-] = \dfrac{x_f}{V}$ $\quad [CH_3COO^-] = \dfrac{n_2 - x_f}{V} = \dfrac{n_2}{V} - \dfrac{x}{V}$

d'où $[CH_3COO^-] = \dfrac{n_2}{V} - [HCOO^-]$

4/ $\sigma = \lambda_{HCOO^-}[HCOO^-] + \lambda_{CH_3COO^-}[CH_3COO^-] + \lambda_{Na^+}[Na^+]$

$\sigma = \lambda_1[HCOO^-] + \lambda_2\left(\dfrac{n_2}{V} - [HCOO^-]\right) + \lambda_3 \dfrac{n_2}{V}$

$\sigma = [HCOO^-](\lambda_1 - \lambda_2) + \dfrac{n_2}{V}(\lambda_2 + \lambda_3)$

5/ $[HCOO^-] = \dfrac{\sigma - \frac{n_2}{V}(\lambda_2 + \lambda_3)}{\lambda_1 - \lambda_2} = \dfrac{0,973 - \frac{5\,10^{-3}}{50\,10^{-6}}(4,09 + 5,01)\,10^{-3}}{(5,46 - 4,09)\,10^{-3}} = 45,9\ mol/m^3$

$[HCOO^-] = 4,59\ 10^{-2}\ mol/l$

$[CH_3COO^-] = \dfrac{n_2}{V} - [HCOO^-] = \dfrac{5\,10^{-3}}{50\,10^{-3}} - 4,59\ 10^{-2} = 5,4\ 10^{-2}\ mol/l.$