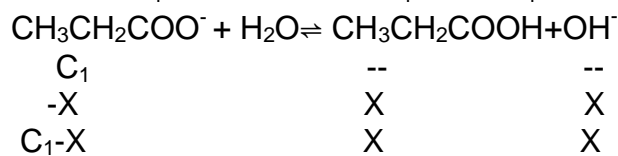
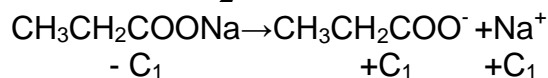


$$\text{mol CH}_3\text{J}_3 = \frac{m}{Mr} = \frac{78,8}{394} = 0,2$$

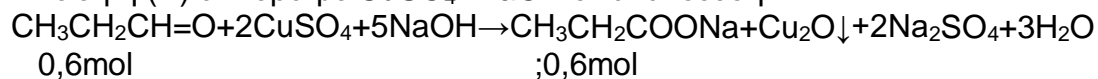
$$[\text{άλατος}] = C_1 = \frac{0,2}{2} = 0,1M$$



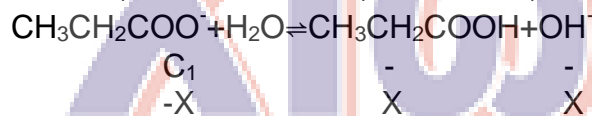
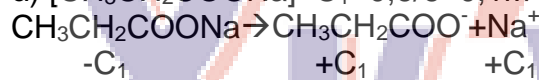
$$K_b \approx \frac{X^2}{C_1} = \frac{K_w}{K_a} \Rightarrow X = 10^{-5} M \rightarrow POH = 5 \rightarrow PH = 9$$

ΘΕΜΑ 4^ο

Επειδή η (Α) αντιδρά με $\text{CuSO}_4 + \text{NaOH}$ είναι αλδεΐδη



α) $[\text{CH}_3\text{CH}_2\text{COONa}] = C_1 = 0,6/6 = 0,1M$



$$K_b = \frac{X^2}{C_1} = \frac{K_w}{K_a} \Rightarrow K_a = 10^{-5}$$

$PH = 9 \rightarrow POH = 5 \rightarrow X = 10^{-5}M$

β) έστω C_2 η νέα $[\text{CH}_3\text{CH}_2\text{COONa}]$

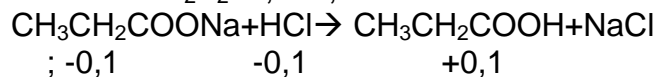
$$K_b \approx \frac{Y^2}{C_2} = \frac{K_w}{K_a} \Rightarrow C_2 = \frac{Y^2 \cdot K_a}{K_w} \Rightarrow C_2 = \frac{(10^{-5})^2 \cdot 10^{-5}}{10^{-14}} = 0,01M$$

$PH' = 9 - 0,5 = 8,5 \rightarrow POH' = 5,5 \rightarrow [\text{OH}^-]' = Y = 10^{-5,5}M$

$$C_1 \cdot V_1 = C_2 \cdot V_2 \rightarrow V_2 = \frac{0,1 \cdot 2}{0,01} = 20L \text{ άρα } V_{\text{H}_2\text{O}} = 20 - 2 = 18L$$

γ) mol άλατος $= C_1 V_1 = 0,1 \cdot 2 = 0,2$

mol HCl $= C_2 V_2 = 0,1 \cdot 0,1 = 0,1$



τελικά έχω: $\text{CH}_3\text{CH}_2\text{COOH}: C_3 = 0,1/3M$, $\text{CH}_3\text{CH}_2\text{COONa}: C_4 = 0,1/3M$

Με Ε.Κ.Ι. ή με τον τύπο των ρυθμ. δ/των προκύπτει: $PH = 5$