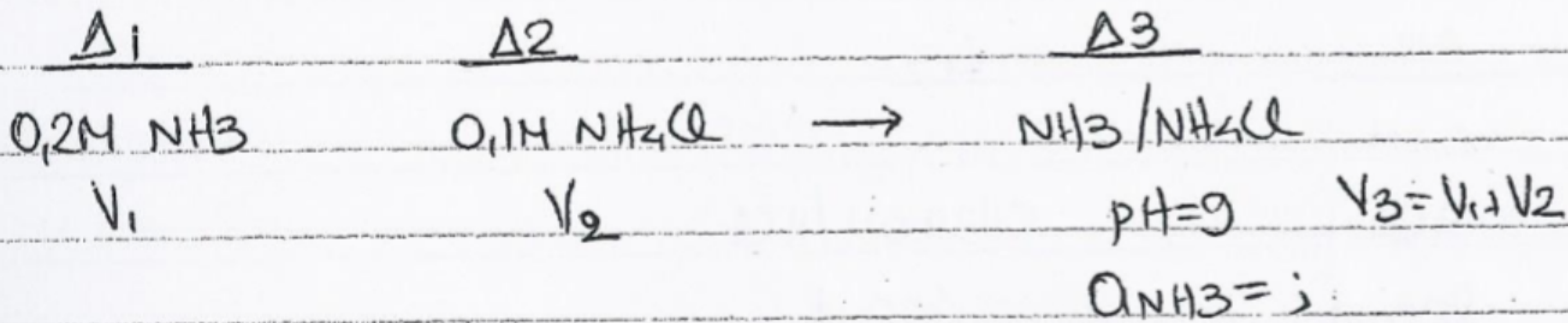


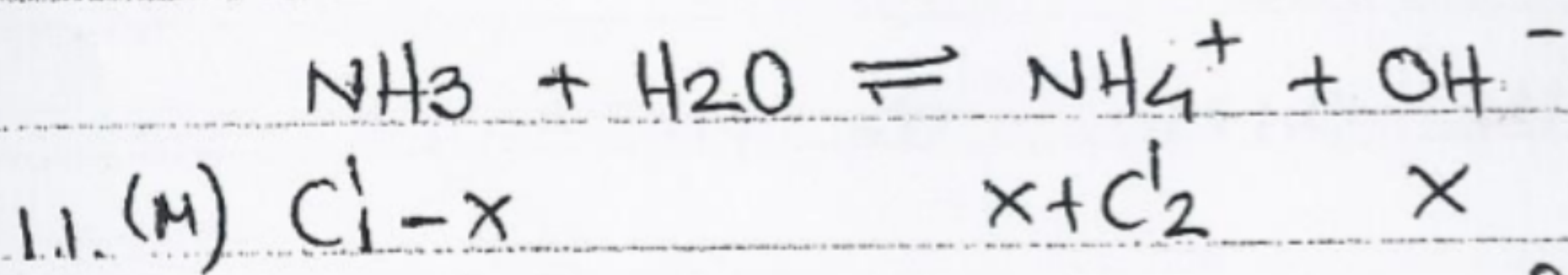
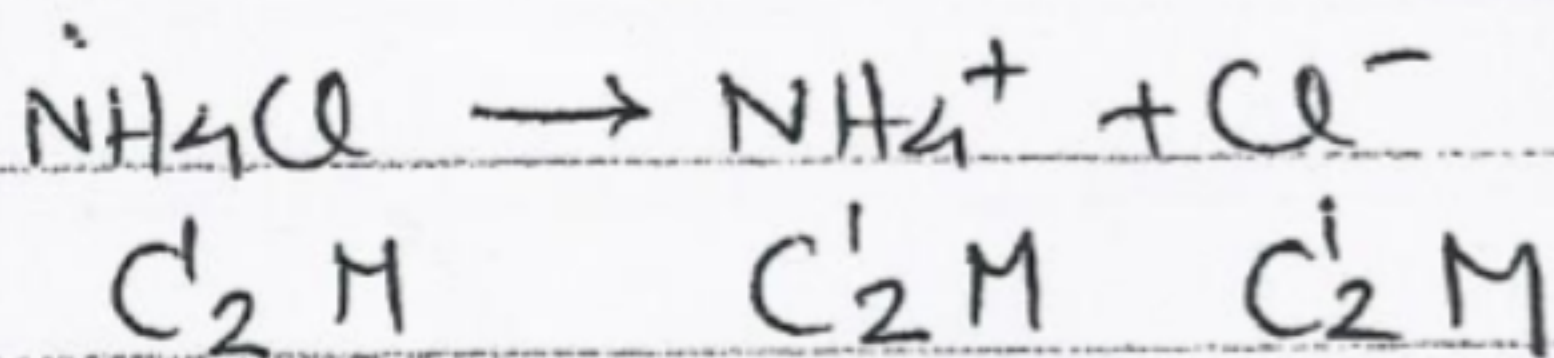
10.2



Δ_1 : $n_{\text{NH}_3} = 0,2V_1 \text{ mol}$ Δ_2 : $n_{\text{NH}_4\text{Cl}} = 0,1 \cdot V_2 \text{ mol}$

Δ_3 : κατά την ανάμειξη βεβ. πραγματοποιείται αντίδραση.
 Ο όγκος αλλάζει, άρα αλλάζουν και οι συγκεντρώσεις των ενώσεων NH₃ και NH₄Cl.

$$C'_{\text{NH}_3} = \frac{0,2V_1}{V_3} = C'_1 \quad C'_{\text{NH}_4\text{Cl}} = \frac{0,1V_2}{V_3} = C'_2$$



$$K_b = \frac{(x + C'_2) \cdot x}{C'_1 - x} \approx \frac{C'_2 \cdot x}{C'_1}$$

θεωρούμε: $C'_1 - x \approx C'_1$, $C'_2 + x \approx C'_2$

Άρα: $K_b = \frac{C'_2 \cdot x}{C'_1}$ } $2 \cdot 10^{-5} = \frac{C'_2 \cdot 10^{-5}}{C'_1} \Rightarrow C'_2 = 2C'_1$

pH=9 \Rightarrow pOH=5

$$\Rightarrow \frac{0,1V_2}{V_3} = 2 \cdot \frac{0,2V_1}{V_3} \Rightarrow \frac{0,1}{0,4} = \frac{V_1}{V_2} \Rightarrow \left| \frac{V_1}{V_2} = \frac{1}{4} \right|$$

($V_2 = 4V_1$)

$$C'_{\text{NH}_3} = \frac{0,2V_1}{V_1 + V_2} = \frac{0,2V_1}{V_1 + 4V_1} = \frac{0,2 \cdot V_1}{5 \cdot V_1} = 0,04 \text{ M}$$

$$C'_{\text{NH}_4\text{Cl}} = \frac{0,1V_2}{V_1 + V_2} = \frac{0,1 \cdot 4V_1}{5V_1} = 0,08 \text{ M}$$

Δηλ. οι προβλεπ. ισχύουν
 και: $\alpha_{\text{NH}_3} = \frac{10^{-5}}{2,5 \cdot 10^{-4}} = 2,5 \cdot 10^{-4}$