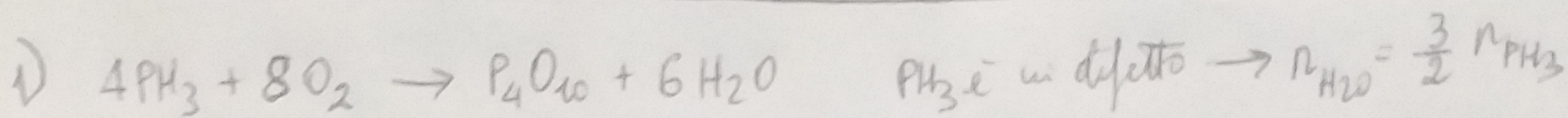
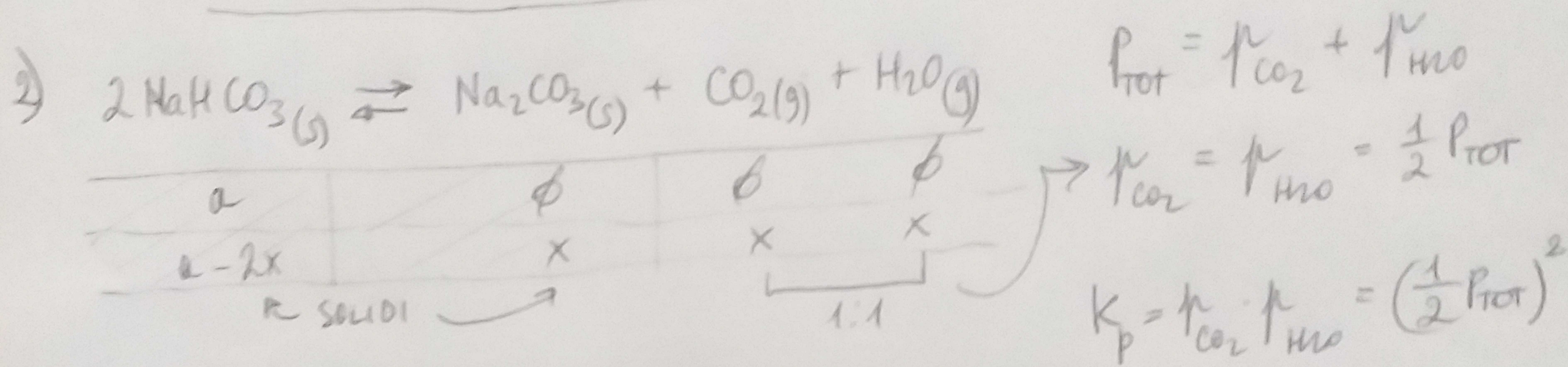


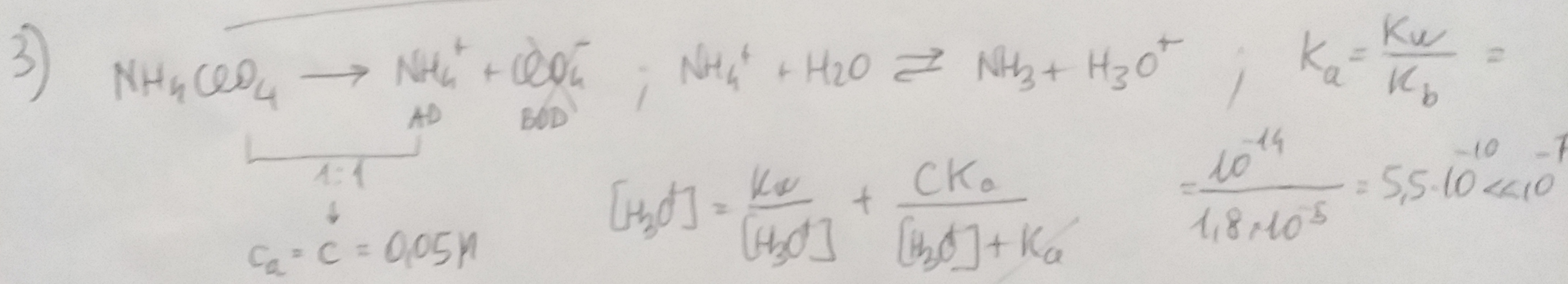
# Soluzioni della Prova Scritta del 12 Febbraio 2019



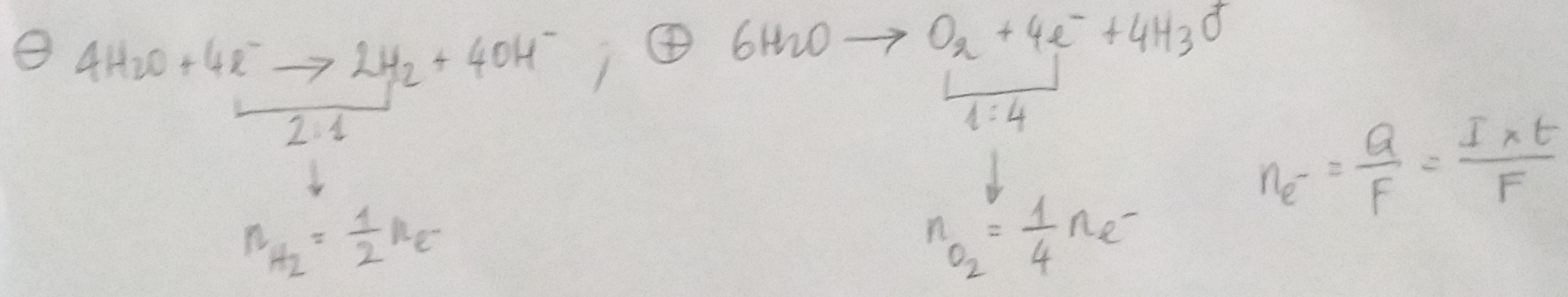
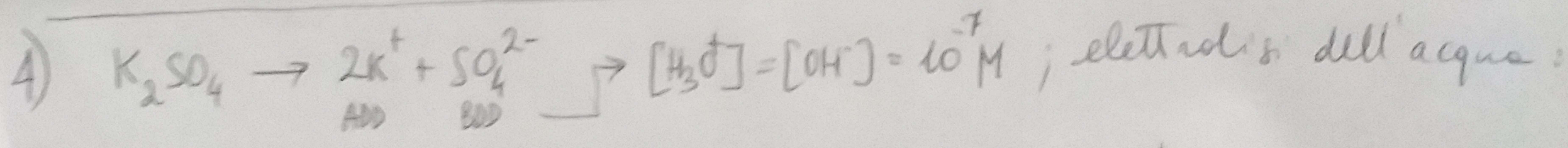
$n_{\text{PH}_3} = \frac{pV}{RT} = \frac{310,5 \text{ L} \cdot 3 \text{ atm}}{0,0821 \cdot 378,15} = 30,00 \text{ mol}$ ;  $m_{\text{H}_2\text{O}} = n_{\text{H}_2\text{O}} \cdot M = \frac{3}{2} \times 30 \times 18,02 = \underline{81,00 \text{ g}}$



$\Delta n = 2 \rightarrow K_c = K_p (RT)^{-2} = \frac{\frac{1}{4} p_{\text{TOT}}^2}{(0,0821 \cdot 423,15)^2} = \underline{6,71 \cdot 10^{-4}}$



$[\text{H}_3\text{O}^+]^2 - K_w - CK_a = 0 \rightarrow [\text{H}_3\text{O}^+] = \sqrt{K_w + CK_a} = \sqrt{10^{-14} + 2,75 \cdot 10^{-14}} = 5,24 \cdot 10^{-6} \text{ M} \rightarrow \underline{\text{pH} = 5,3}$



$n_{\text{H}_2} = \frac{I \cdot t}{2F} = \frac{0,2 \cdot 7200}{2 \cdot 96486} = 0,00746 \text{ mol}$  ;  $n_{\text{O}_2} = \frac{I \cdot t}{4F} = \frac{0,2 \cdot 7200}{4 \cdot 96486} = 0,00373 \text{ mol}$