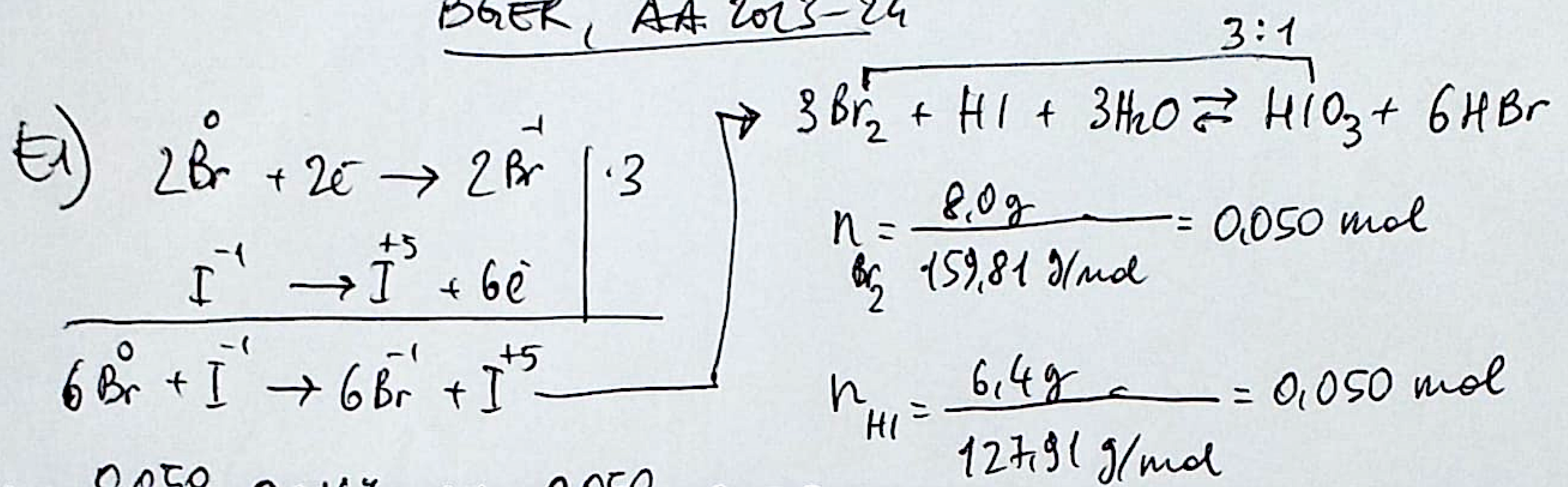


Soluzioni degli esercizi della Prova Scritta del 6/2/24

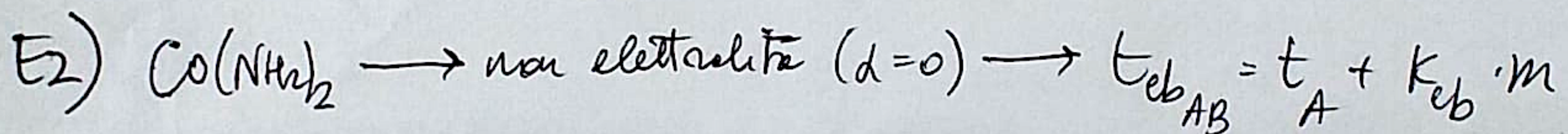
BGER, AA 2023-24



$\text{Br}_2: \frac{0,050}{3} = 0,0167; \text{HI}: \frac{0,050}{1} = 0,050$

Br_2 è reattivo limitante; $n_{\text{HIO}_3} = \frac{1}{3} n_{\text{Br}_2} = 0,0167\text{ mol}$

$m_{\text{HIO}_3} = n \cdot M = 0,0167(\text{mol}) \cdot 127,91(\text{g/mol}) = 2,14\text{g} \approx 2,1\text{g}$



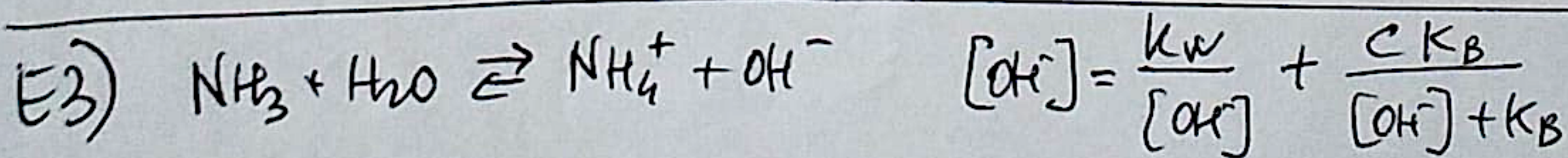
Per determinare la molalità m , considero 1L di soluzione:

1L $\left\{ \begin{array}{l} \rightarrow m_{AB} = d \cdot V = \frac{1,05}{(\text{g/mL})} \cdot \frac{10^3}{(\text{mL})} = 1050\text{g} \\ \rightarrow m_B = n \cdot M = 0,500(\text{mol}) \cdot 60,06(\text{g/mol}) = 30,03\text{g} \end{array} \right.$

$C = \frac{\pi}{RT} = \frac{12,23\text{atm}}{0,0821 \cdot 298,15} = 0,500\text{ M}$

$m_A (\text{in 1L di soluzione}) = (1050 - 30,03)\text{g} = 1019,97\text{g} = 1,01997\text{kg} \approx 1,02\text{kg}$

$t_{\text{eb}} = 100 + 0,512 \cdot 1,02 = 100,52^\circ \approx 100,5^\circ\text{C}$



$\text{pH} = 9,50 \rightarrow \text{pOH} = 4,50$

Sostituendo all'equazione, abbiamo:

$10^{-4,50} = \frac{1,8 \cdot 10^{-5} C}{4,96 \cdot 10^{-5}} \rightarrow C = \frac{4,96}{1,8} \cdot 10^{-4,50} =$

$C = 8,7 \cdot 10^{-5}\text{ M}$

$\frac{10^{-4,50}}{10^{-4,50}} = 10^{-9,50} + \frac{C \cdot 1,8 \cdot 10^{-5}}{10^{-4,50} + 1,8 \cdot 10^{-5}}$
Procuri rispetto a