

$$\textcircled{1} \quad \frac{63 \text{ g zout}}{75 \text{ g water}} \rightarrow \text{grafiek} = 100 \text{ g}$$

$$\Rightarrow 75 \cdot \frac{4}{3} = 100$$

$$63 \cdot \frac{4}{3} = \frac{172}{3} \approx 57,3 \text{ g} \quad \left. \vphantom{\frac{172}{3}} \right\} \Rightarrow 60^\circ \text{C}$$

$\text{NH}_4\text{Cl} \rightarrow$  blauwe grafiek

$\textcircled{D}$

$$\textcircled{2} \quad \text{Ks} \rightarrow \begin{array}{c} 75 - \text{P} + \text{n} \\ \text{As} \rightarrow \mu = 75 - 33 = 42 \\ 33 - \text{P} \end{array}$$

$$\text{A) } \begin{array}{c} 42 \\ 20 \end{array} \text{Ca} \rightarrow 42 - 20 = 22$$

$$\text{B) } \begin{array}{c} 61 \\ 28 \end{array} \text{Ni} \rightarrow 61 - 28 = 33$$

$$\text{C) } \begin{array}{c} 76 \\ 34 \end{array} \text{Se} \rightarrow 76 - 34 = 42$$

$\textcircled{C}$

$$\textcircled{3} \quad 1 \text{ streepje} = 2e^- \rightarrow 4 \text{ streepjes / atoom}$$

a e d  $\rightarrow$   $\textcircled{D}$



④  $X$  16 g  $27^\circ\text{C}$  1000 hPa  $\rightarrow V = 75\text{ l}$

A)  $\text{NH}_3 \rightarrow \mu = 16 + 3 \cdot 1 = 17 \text{ g/mol}$

B)  $\text{Ar} \rightarrow \mu = \underline{39,9 \text{ g/mol}}$

C)  $\text{Cl}_2 \rightarrow \mu = 2 \cdot 35,5 = 71 \text{ g/mol}$

D)  $\text{SO}_2 \rightarrow \mu = 32,1 + 2 \cdot 16 = 64,1 \text{ g/mol}$

$27^\circ\text{C} \leadsto 300\text{ K}$

$$p \cdot V = \mu \cdot R \cdot T$$

$$\Rightarrow \mu = \frac{p \cdot V}{R \cdot T} = \frac{1000 \cdot 10^2 \cdot 75 \cdot 10^{-3}}{8,31 \cdot 300}$$

$$\approx 3 \text{ mol}$$

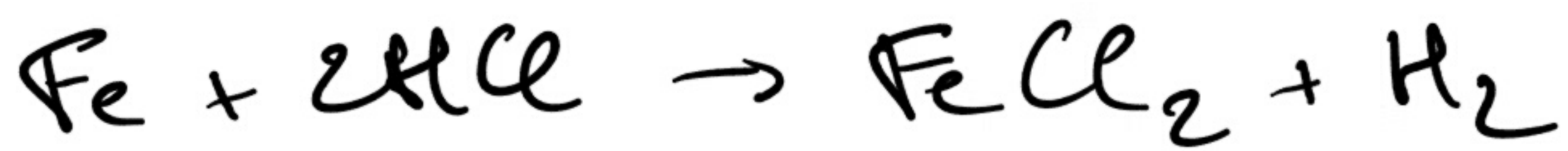
$$\mu = \frac{16 \text{ g}}{3 \text{ mol}} = \underline{40 \text{ g/mol}} \rightarrow \text{Ar}$$

ⓑ



5

$$\text{I) } n_{\text{HCl}} = c \cdot V = 6 \frac{\text{mol}}{\text{l}} \cdot 0,2 \text{ l} = 1,2 \text{ mol}$$



0,05	1,2	0	0	}	mol
-0,05	-0,1	0,05	0,05		
0	1,1	0,05	0,05		

$$\text{II) } n_{\text{HCl}} = c \cdot V = 6 \frac{\text{mol}}{\text{l}} \cdot 0,1 \text{ l} = 0,6 \text{ mol}$$

0,1	0,2	0,1	0,1
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$$\text{III) } n_{\text{HCl}} = c \cdot V = 6 \frac{\text{mol}}{\text{l}} \cdot 0,05 \text{ l} = 0,3 \text{ mol}$$

0,2	0,3	0	0	←
-0,15	0,3	0,15	0,15	

$$\text{IV) } n_{\text{HCl}} = c \cdot V = 6 \frac{\text{mol}}{\text{l}} \cdot 0,025 = 0,15 \text{ mol}$$

0,4	0,15		
-0,075	-0,15	0,075	0,075

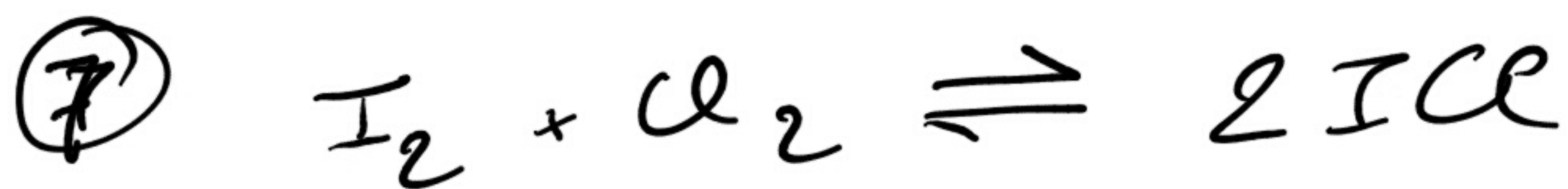
C



$$V_{\text{gem}} = \frac{\Delta[A]}{2\Delta t}$$

$$1^{\text{e}} \text{ minute: } D: 0 \rightarrow 0,05 \text{ mol/l}$$

$$\Rightarrow \frac{0,05}{2,1} = 0,025 \text{ mol/l.min} \quad \textcircled{B}$$



? welke zat gaat evenwicht?

$$K_2 = \frac{[ICl]^2}{[I_2][Cl_2]}$$

$$\text{I)} \quad \frac{1,5^2}{0,5 \cdot 0,5} = \frac{15^2}{5^2} = \frac{15 \cdot 15}{5 \cdot 5} = 9$$

$$\text{II)} \quad \frac{3^2}{1 \cdot 1} = 9$$

$$\text{III)} \quad \frac{6^2}{4 \cdot 1} = \frac{36}{4} = 9$$

$$\text{IV)} \quad \frac{9^2}{0,5 \cdot 2} = 81 \quad \leftarrow$$

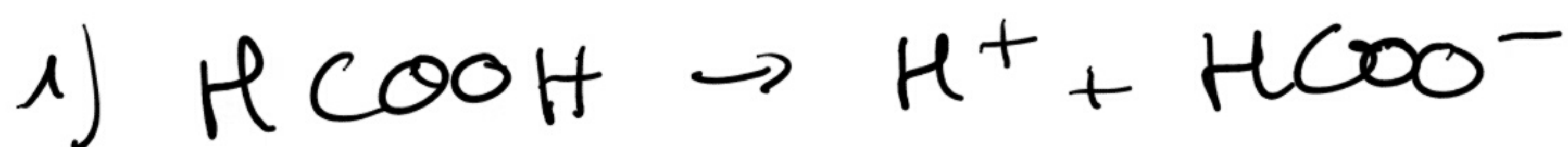
$\textcircled{D}$



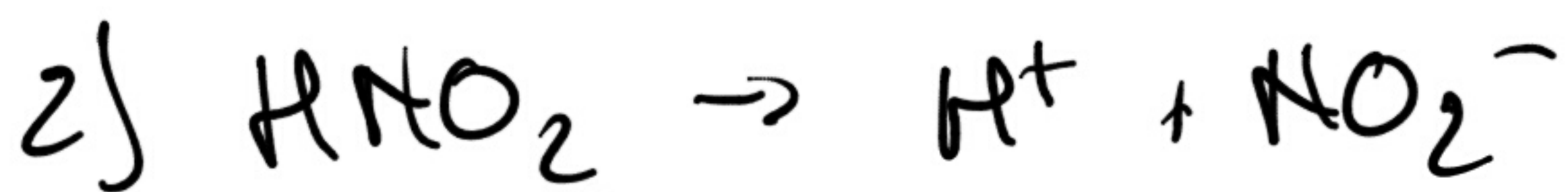
⑧  $K$  bij  $25^\circ\text{C}$  ?



$$K_2 = \frac{[\text{HNO}_2][\text{HCOO}^-]}{[\text{NO}_2^-][\text{HCOOH}]}$$



$$K_1 = \frac{[\text{H}^+][\text{HCOO}^-]}{[\text{HCOOH}]} = 1,8 \cdot 10^{-4}$$



$$K_2 = \frac{[\text{H}^+][\text{NO}_2^-]}{[\text{HNO}_2]} = 5 \cdot 10^{-4}$$

$$\Rightarrow K = \frac{K_1}{K_2} = \frac{1,8}{5} = 0,36$$

C

$$\textcircled{9} \quad \text{A) } \text{NH}_4\text{MnO}_4 \rightarrow 1 + 4(-2) + x = 0$$

$$\Rightarrow x = 7 \quad \underline{\underline{\text{VII}}}$$

$$\text{B) } \text{K}_3\text{MnO}_4 \rightarrow 3 \cdot 1 + 4(-2) + x = 0$$

$$\Rightarrow x = 5 \quad \underline{\underline{\text{V}}}$$

$$\text{C) } \text{CsMn}(\text{SO}_4)_2 \rightarrow 1 + 2(-2) + x = 0$$

$$\Rightarrow x = 3 \quad \underline{\underline{\text{III}}}$$

$\textcircled{\text{C}}$

$\textcircled{10}$

$\textcircled{\text{B}}$

?