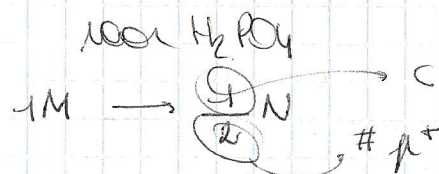


# Vraagstukken deel I

## \* Concentraties



2.

$HCl : MM = 36,45 \text{ g/mol}; 37\% ; \rho = 1,18 \text{ g/mL}$

100%  $1L \rightarrow 1180 \text{ g} \rightarrow 32,373 \text{ mol}$

37%  $1L \rightarrow 11,978 \text{ mol}$

$C = 0,1 N \rightarrow n = 0,01 \text{ mol}$   
 $V = 100 \text{ mL}$

$0,835 \text{ mL} = V$

3.  $0,5L \ 50 \cdot 10^{-3} M$  fosfaatbuffer bij  $pH = 6$ .

$\Rightarrow$  Tabel p30 :

$87,7 \text{ mL } NaH_2PO_4 \quad 12,3 \text{ mL } Na_2HPO_4 \text{ (per } 100 \text{ mL)}$   
 $438,5 \text{ mL } " \quad 61,5 \text{ mL } " \text{ (per } 500 \text{ mL)}$

I  $C = 50 \cdot 10^{-3} M ; V = 0,5L$

$m = C \cdot V = 0,025 \text{ mol} \Rightarrow m = 3,45 \text{ g } NaH_2PO_4$

II  $C = 50 \cdot 10^{-3} M ; V = 0,1L$

$m = 0,005 \text{ mol} \Rightarrow m = 0,89 \text{ g } Na_2HPO_4$

$\Rightarrow 438,5 \text{ mL opl I} + 58 \text{ mL opl II} + \text{druppels II toevoegen tot juiste pH.}$

## \* Spectrofotometrie

$A = \epsilon \cdot C \cdot l ; A = \log\left(\frac{1}{T}\right)$

$\left. \begin{matrix} C = 10^{-5} M \\ T = 70,2\% \\ l = 1 \text{ cm} \end{matrix} \right\} \frac{\log\left(\frac{1}{0,702}\right)}{10^{-5} M \cdot 1 \text{ cm}} = 15400 \text{ M}^{-1} \text{ cm}^{-1} = \epsilon$

\*

$A_3 = 15400 \text{ M}^{-1} \text{ cm}^{-1} \cdot 10^{-5} M \cdot 3 \text{ cm} = 0,462$

$T_3 = \frac{1}{10^A} \cdot 100\% = 34,5\%$

$A(5 \cdot 10^{-5} M) = 0,77$