Chimie 308
Révision: Solutions (corrigé)

1. $0,24 = \frac{m}{(750+m)}$

$180 + 0,24m = m$
$180 = 0,76m$
$236,8421053g = m$

K_2CrO_4 : 194,1902g/mol

$236,8421053g\left(\frac{1mol}{194,1902g}\right) = 1,22mol\ K_2CrO_4$

2. $\%\ V/V = \frac{20,3mL}{85,1mL} = 23,85\%$

3. $NaHCO_3$: 84,00691g/mol

$69,0g\left(\frac{1mol}{84,00691g}\right) = 0,82mol$

$C = \frac{0,82mol}{1,0L} = 0,82mol/L$

4. $NaOH$: 39,99711g/mol

$57,2g\left(\frac{1mol}{39,99711g}\right) = 1,430103325mol$

$C = \frac{1,430103325mol}{0,1L} = 14,30mol/L$

5. 4 tasses = 0,946L
1 tasse = 0,2365L ≃ 236,5g

$\frac{0,3g}{236,5g} \times 10^6 = 1268,50ppm$

6. $85\%\ m/V = \frac{85g}{100mL}\left(\frac{1mol}{97,99518g}\right)\left(\frac{1000mL}{1L}\right) = 867mol/L$

H_3PO_4 : 97,99518g/mol

7. $n = (0,1255mol/L)(0,02646L) = 3,32 \times 10^{-3}mol$

8. $c' = 0,3M$
$V' = 500mL$
$c = 18,0M$
$V = ?$

$V = \frac{c'V'}{c} = \frac{(0,3M)(500mL)}{18,0M} = 8,33mL$

Nous avons besoin 491,67mL d'eau.

9. $n = (0,5L)(0,250mol/L) = 0,125mol$ de $C_{12}H_{22}O_{11}$

$0,125mol\left(\frac{342,30008g}{1mol}\right) = 42,79g$

Ajouter 42,79g à 500mL d'eau.

10. $m_{H_2SO_4} = (0,97)\ 184g$ $\quad H_2SO_4$: 98,07948g/mol

$= 178,48g$

$178,48g\left(\frac{1mol}{98,07948g}\right) = 1,8197mol$ $\quad C = \frac{1,8197mol}{0,1L} = 18,20\ mol/L$

11. $m_{Cl} = \frac{2\ (76\,000\,000g)}{10^6} = 152g$

12. $2,5mol\left(\frac{34,99711g}{1mol}\right) = 99,992775g$

$\%\ m/m = \frac{99,992775g}{1\,000\ g} = 10,00\%\ m/m$

13. $\frac{15g}{100mL} = \frac{15g}{0,1L} = \frac{150g}{L}(1,5L) = 225g$

14. $\frac{0,000025g}{1000\ g} \times 10^9 = 250\ ppb$

15. $\frac{25,21\ g}{100\ mL} \cdot \frac{5}{5} = \frac{126,05g}{500mL}$ $\quad HCl$: 36,46064 g/mol

$126,05g\left(\frac{1mol}{36,46064g}\right) = 3,457152699\ mol$

$C = \frac{3,457152699mol}{0,5L} = 6,914305399\ mol/L$

$V = 500mL$

$c' = 1,5M$

$V' = \frac{6,91M \cdot 0,5L}{1,5M} = 2,30L$