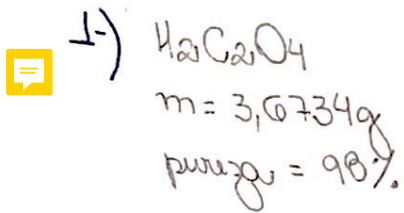


AVALIAÇÃO 1



$\Rightarrow V = 250\text{ mL} = 0,25\text{ L}$
côquer

a) [] em massa = ?

$MM \text{H}_2\text{CaO}_4 = 2 \cdot 12 + 2 + 4 \cdot 16 = 90\text{ g/mol}$

$C = \frac{m}{V} \rightarrow C = \frac{3,6734\text{g}}{0,25\text{L}} = 14,69\text{ g/L}$

b) $M = \frac{n}{V}$

$n = \frac{m}{MM} \rightarrow n = \frac{3,6734\text{g}}{90\text{g/mol}} = 0,0408\text{ mol}$

$M_n = \frac{nm}{Vt}$

$M_n = \frac{0,0408\text{ mol}}{0,1\text{L}} = 0,408\text{ mol/L}$

2-a) $d = \frac{m}{V} \rightarrow m = d \cdot V$

$m_s = 1,84\text{ g/mL} \cdot 1200\text{ mL}$

$m_s = 2208\text{ g}$

$m_n = W_n \cdot m_t$

$m_{\text{H}_2\text{SO}_4} = 0,95 \cdot 2208\text{ g}$

$m_{\text{H}_2\text{SO}_4} = 2097,6\text{ g}$

b) $MM \text{H}_2\text{SO}_4 = 2 + 32 + 4 \cdot 16 = 98\text{ g/mol}$

[] molar (mol/L)

$M = \frac{W_n \cdot d \cdot 1000}{MM} \rightarrow M = \frac{0,95 \cdot 1,84\text{ g/mL} \cdot 1000}{98\text{ g/mol}}$

$\rightarrow 17,836\text{ mol/mL}$

\downarrow
 $17,836\text{ mol/L}$

c) $V_{H_2SO_4} = ?$

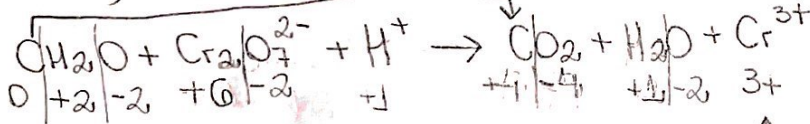
$2,50 \text{ mL a } 2,5 \text{ g/L}$

$C = \frac{m}{V} \rightarrow 2,5 \text{ g/L} = \frac{m}{0,25 \text{ L}} \rightarrow m = 0,25 \text{ g}$

$N = \frac{m}{mt} \rightarrow 0,95 = \frac{0,25 \text{ g}}{mt} \rightarrow mt = 0,58 \text{ g}$

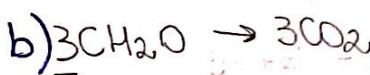
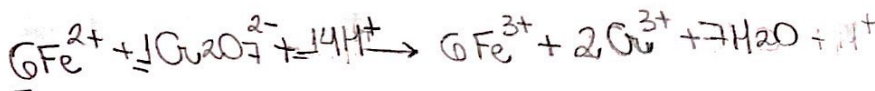
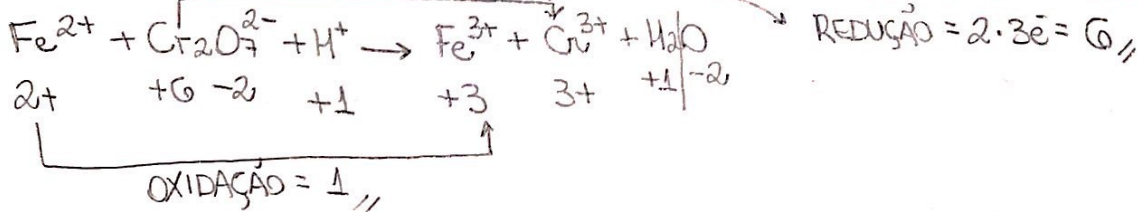
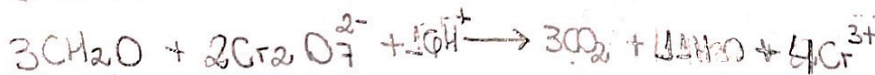
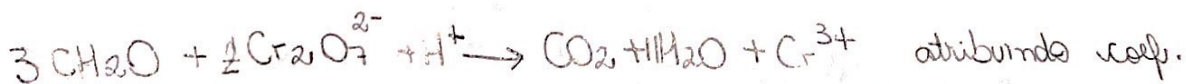
$d = \frac{m}{V} \rightarrow 1840 \text{ g/L} = \frac{0,58 \text{ g}}{V} \rightarrow V = 0,0036 \text{ mL}$
 OU
 $3,60 \text{ L solução } H_2SO_4$

3-a) Oxidação da MO:



OXIDAÇÃO $\Delta = 4e^-$ simplificado = $2e^-$

REDUÇÃO $\Delta = 3e^- \cdot 2 = 6e^-$ simplificado = $3e^-$

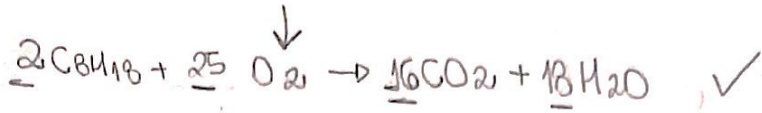
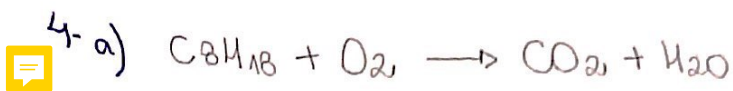


$1 \text{ mol } CO_2 \text{ --- } 22,4 \text{ L}$
 $X \text{ --- } 134,4 \text{ L}$
 $X = 6 \text{ mols}$

$3 \text{ mols } CH_2O \text{ --- } 3 \text{ mols } CO_2$
 $6 \text{ mols } CH_2O \text{ --- } 6 \text{ mols } CO_2$
 $Y = 6 \text{ mols } CH_2O$

$1 \text{ mol } CH_2O \text{ --- } 30 \text{ g}$
 $6 \text{ --- } Z$

$Z = 180 \text{ g MO}$



b) $m_{O_2} \rightarrow$ combustão completa

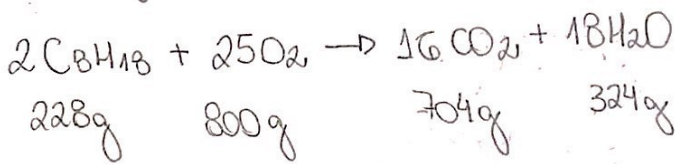
$m_{C_8H_{18}} = 456g$

MM $C_8H_{18} = 8 \cdot 12 + 18 \cdot 1 = 114g/mol$

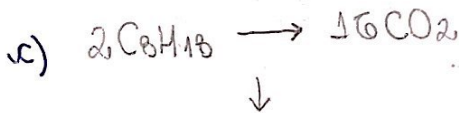
MM $O_2 = 32g/mol$

MM $CO_2 = 44g/mol$

MM $H_2O = 18g/mol$

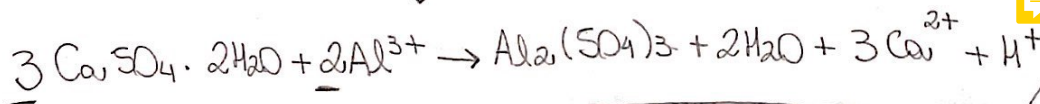
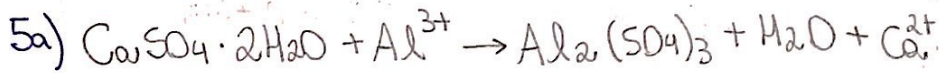


$228g \text{ --- } 800g$
 $456g \text{ --- } X$
 $X = 1600g \text{ } O_2$



Rendimento = $\frac{\text{quantidade obtida}}{\text{quantidade esperada}} \cdot 100 \rightarrow R = \frac{704g \text{ } CO_2}{1056g \text{ } CO_2} \cdot 100$

$R = 66,6\%$



$1000 - 240 = 760g$
 $EXCESSO$

b) $80g \text{ } Al^{3+}$

