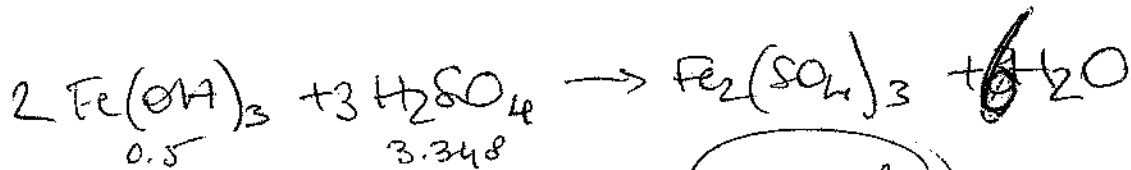


computo

Chun- Jan 2022

EX 1



$$\text{mol Fe(OH)}_3 = \frac{53.4 \text{ g}}{106.9 \text{ g/mol}} = 0.500 \text{ mol}$$

$(3.348 - 0.75) = 2.598 \text{ mol}$

$$(188 \text{ mL} \cdot 1.80 \text{ g/mL}) \cdot 0.98 = 328.1 \text{ g H}_2\text{SO}_4 \text{ puro}$$

$$\text{mol H}_2\text{SO}_4 = \frac{328.1 \text{ g}}{98.0 \text{ g/mol}} = 3.348 \text{ mol}$$

$$2:3 = 0.5 \text{ mol} : x \quad \textcircled{V} \quad \underline{\text{Fe(OH)}_3 \text{ limitante}}$$
$$3:2 = 3.348 \text{ mol} : x \quad \text{X}$$

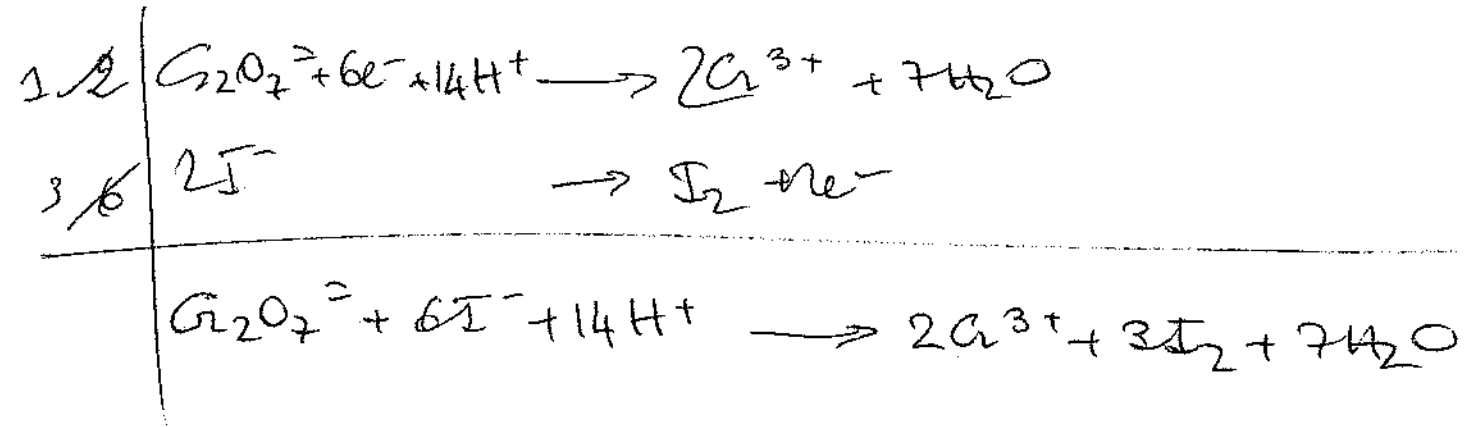
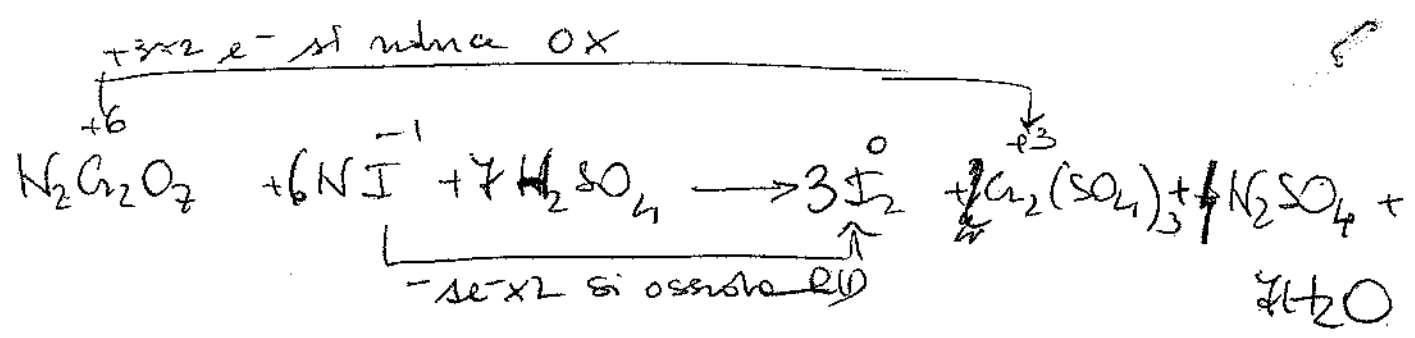
$$2:1 = 0.500 \text{ mol} : x \text{ mol Fe}_2(\text{SO}_4)_3$$

$$0.250 \text{ mol Fe}_2(\text{SO}_4)_3 \cdot 399.9 \text{ g/mol} = \boxed{99.98 \text{ g}}$$

$$\text{Mol H}_2\text{SO}_4 \text{ in eccesso} = 2.598 \text{ mol}$$

1

EX2



$$P = \frac{755 \text{ mmHg}}{760 \text{ mmHg}} = 0.993 \text{ atm}$$

$$V = 7 \text{ L}$$

$$n = \frac{pV}{RT} = \frac{0.993 \cdot 7}{0.0821 \cdot 297}$$

$$T = (24 + 273) \text{ K} = 297 \text{ K}$$

$$n = \frac{6.951}{24.38} = 0.285 \text{ mol I}_2 \text{ effettive}$$

$$\frac{0.285 \text{ mol}}{0.982} = 0.290 \text{ mol TEORICHE}$$

$$3 : 1 = 0.290 \text{ mol} : x \text{ mol N}_2\text{Cr}_2\text{O}_7$$

$$\text{mol N}_2\text{Cr}_2\text{O}_7 = 0.0968 \text{ mol} \cdot 294.2 \text{ g/mol} = 28.47 \text{ g N}_2\text{Cr}_2\text{O}_7 \text{ puro}$$

$$\frac{28.47 \text{ g}}{0.98} = \underline{29.05 \text{ g}} \text{ N}_2\text{Cr}_2\text{O}_7 \text{ al } 98\%$$

2

Ex 3

$$i) (200 \text{ mL} \cdot 1.20 \text{ g/mL}) \cdot 0.375 = 90 \text{ g}$$

$$ii) (150 \text{ mL} \cdot 1.008 \text{ g/mL}) \cdot 0.05 = 7.56 \text{ g}$$

97.56 g

$$\frac{97.56 \text{ g}}{36.5 \text{ g/mol}} = 2.673 \text{ mol HCl}$$

$$M_f = \frac{2.673 \text{ mol}}{0.350 \text{ L}} = 7.637 \text{ M}$$

$$0.150 \text{ L} \cdot 7.637 \frac{\text{mol}}{\text{L}} = V_f \cdot 0.250 \frac{\text{mol}}{\text{L}}$$

$$V_f = 4.582 \text{ L}$$

$$V_{\text{H}_2\text{O}} = 4.582 \text{ L} - 0.150 \text{ L} = 4.432 \text{ L}_{\text{H}_2\text{O}}$$

EX4

$$C = 82.7\%$$

$$H_2O = ~~154.3~~ g$$

1000 ml

752 Torr

25°C

$$d = 2.35 g/L$$

Formula minima
e
molecolare $\frac{2}{9}$

Risolvo

$$\text{mol } H_2 = 2 \cdot \text{mol } H_2O = \frac{\cancel{154.3} g}{18.0 g/mol} \cdot 2 = \frac{17.12 \text{ mol}}{11}$$

$$\text{mol } C = \frac{82.7 g}{12.00 g/mol} = 6.892 \text{ mol}$$

$$C \sim 1$$

C_2H_5 formula minima

$$H \sim 2.5$$

$$MM_{\text{min}} = 29 g/mol$$

$$p = \frac{752}{760} = 0.989$$

$$p \cdot V = \frac{m}{MM} \cdot R \cdot T$$

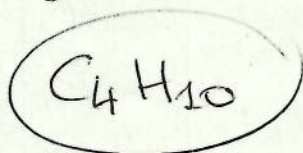
$$V = 1.0 L$$

$$0.989 \cdot 1.0 L = \frac{2.35 g}{MM} \cdot 0.0821 \cdot 298$$

$$T = 298 K$$

$$MM = 58.13 g/mol$$

$$\frac{MM}{MM_{\text{min}}} \sim 2 \Rightarrow$$



formula
molecolare

(4)