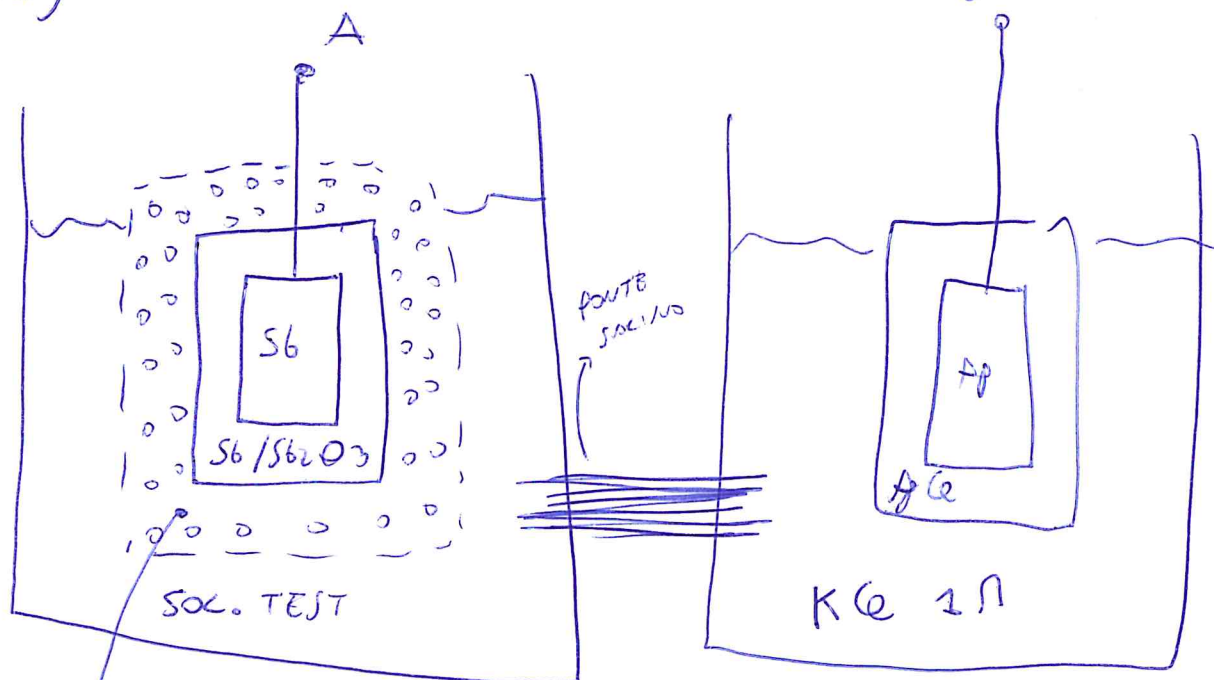
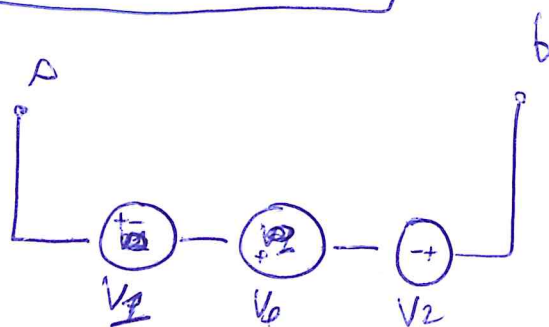


ESL)

1)



→ STRATO ENLIMATIVO
(CONTENUTO IN MEMORIA)
O₂ PENNESVILLO



$$V_{\text{misurato}} = V_{AB} = V_1 + \cancel{V_p} - V_2$$

$$V_1 = E^{\circ}_{\text{Sb/Sb}_2\text{O}_3} + \frac{RT}{F} \ln([H^+]) = \left(\begin{array}{c} \text{Sb}_2\text{O}_3 + 6H^+ + 6e^- \\ \uparrow \downarrow \\ 2\text{Sb} + 3\text{H}_2\text{O} \end{array} \right)$$

$$= \underbrace{0.152V}_{E^{\circ}_{\text{Sb/Sb}_2\text{O}_3}} + 0.0256 \ln([H^+])$$

$$V_p \approx 0$$

$$V_2 = \underbrace{E^{\circ}_{\text{Ag/AgCl}}}_{0.22V} - 0.0256 \ln([Cl^-]) = 0.22V$$

$$V_{AB} = 0.152V + 0.0256 \ln([H^+]) - 0.22V =$$

$$= -0.068V + 0.0256 \ln([H^+])$$

ELETTRODO SENLINA (METODO POTENZIMETRICO) General

VALORE [S] < K₁

$$\Rightarrow [P]_{x=0} = \frac{0.5}{0.01} [S]_{x=L} \left(1 - \frac{1}{\cosh(2.4V)} \right)$$

$$\alpha = \frac{K_2 [E]}{K_1 O_2} = 2 \cdot 10^6 \cdot [m^{-2}]$$

$$\Rightarrow [H^+] = K^* [GLUCO]_0$$

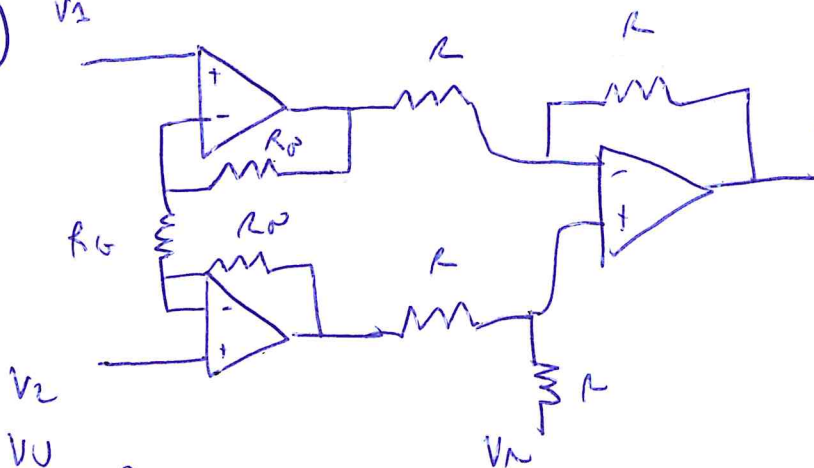
$$K^* = \frac{O_{s/O_2}}{O_2} \left(1 - \frac{1}{\cosh(L\sqrt{\alpha})} \right) = 0.5409$$

$$V_{AP} = -0.068 + 0.0256 \ln(K^* [GLUCO]_0) =$$

$$= -0.068 + 0.0256 \ln(K^*) + 0.0256 \ln([GLUCO]_0)$$

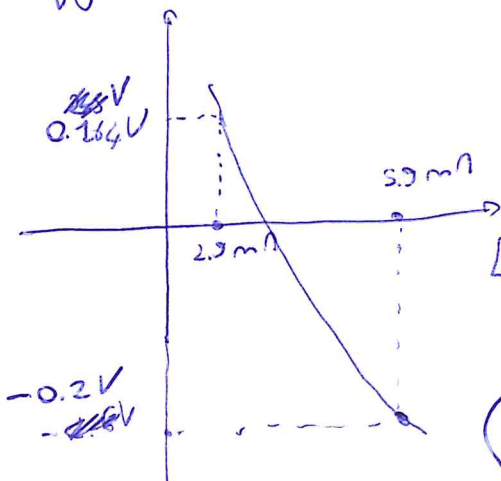
$$\Rightarrow \underline{V_{AP} = -0.0837 + 0.0256 \ln([GLUCO]_0)}$$

2) V_1



$$V_U = A(V_2 - V_1) + V_n$$

$$A = 1 + 2 \frac{R_0}{R_g}$$



CARATTERISTIC
OCCORRENTE

$$\Rightarrow \begin{matrix} A \rightarrow V_1 \\ \sigma \rightarrow V_2 \end{matrix}$$

$$[GLUCO]_0 \quad V_U = AV_{AP} + V_n = -AV_{AP} + V_n$$

$$\begin{cases} A \cdot 0.0837 - A \cdot 0.0256 \ln(2.9 \cdot 10^{-3}) = \frac{V_n}{0.164V} \\ A \cdot 0.0837 - A \cdot 0.0256 \ln(5.9 \cdot 10^{-3}) + V_n = -0.2V \end{cases}$$

$$\Rightarrow \cancel{A} \cdot 0.0256 (\ln(5.9 \cdot 10^{-3}) - \ln(2.9 \cdot 10^{-3})) = 0.384V$$

$$A \cdot 0.0256 \cdot 0.7102 = 0.364V \Rightarrow A = 20$$

$$V_R = -0.2V - A(0.0837 - 0.0256 \ln(5.9 \cdot 10^{-3}))$$

$$V_R = -4.502V$$

$$A = 20 \quad 1 + \frac{2R_D}{R_E} = 20 \quad R_D = 20K \quad R_E = 1053\Omega$$

3) curve di TRANSISTOR

$$V_U = A(0.0837 - 0.0256 \ln([Gluco10])) + V_R$$

$$V_U = A \cdot 0.0837 - A \cdot 0.0256 \ln([Gluco10]) + V_R$$

$$V_U = -2.828V - 0.0256 \ln([Gluco10])$$

$$\ln([Gluco10]) = -\frac{V_U + 2.828}{0.0256}$$

$$[Gluco10] = e^{-\frac{V_U + 2.828}{0.0256}}$$

