

You may use your books and notes. Your signature shows that you agree with the answers. No discussions are allowed between the different teams. Each team returns one signed copy to Prof. Burleigh. Do not go onto a second page.

Name	signature
	Solutions

1 Use the linear polarization (LP) graph to determine the following:

a. What is E_{corr} ?

-80 mV

b. What is R_p ?

$R_p = \frac{\Delta V}{\Delta i} = \frac{40 \text{ mV} \cdot \text{cm}^2}{0.06 \text{ mA}}$

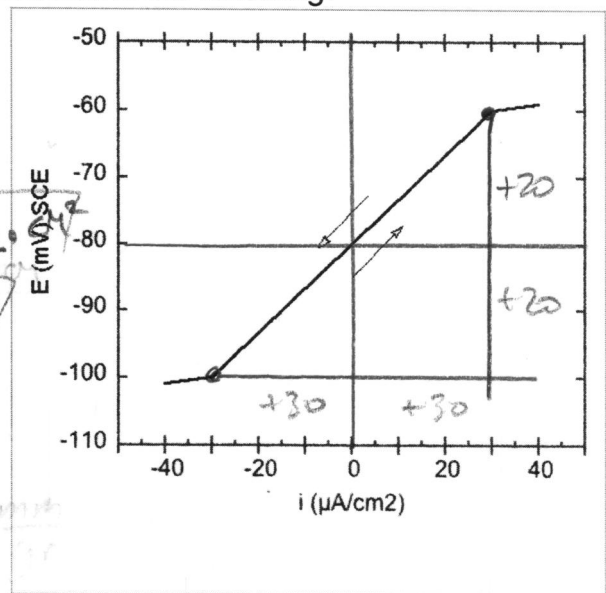
c. If $B=0.03\text{V}$, what is i_{corr} ?

$R_p = 667 \Omega \cdot \text{cm}^2$

$i_{corr} = \frac{B}{R_p} = \frac{0.03 \text{ V}}{667 \Omega \cdot \text{cm}^2} = 45 \frac{\mu\text{A}}{\text{cm}^2}$

d. What is the approximate loss in thickness in $\mu\text{m}/\text{yr}$?

$45 \frac{\mu\text{A}}{\text{cm}^2} \approx 450 \frac{\mu\text{m}}{\text{yr}}$



2. Use the potentiodynamic polarization (DPD) graph to determine the following:

a. What is E_{corr} ?

-0.15 mV

b. What is i_{corr} ?

$10^{-5} \frac{\text{A}}{\text{cm}^2}$

c. What is the approximate loss in thickness in $\mu\text{m}/\text{yr}$?

$10 \frac{\mu\text{A}}{\text{cm}^2} \approx 100 \frac{\mu\text{m}}{\text{yr}}$

