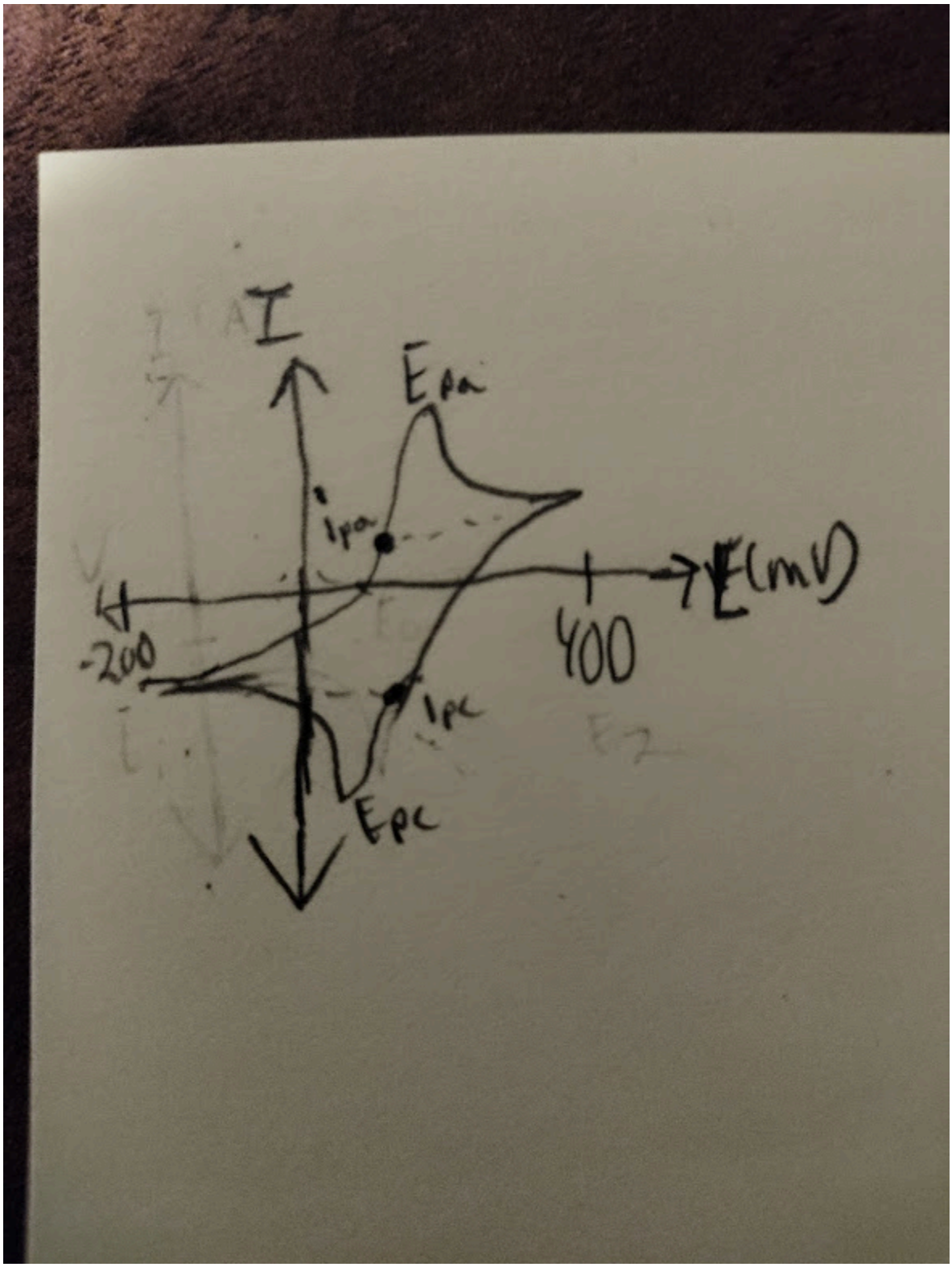
# Part A

1. | Reagent Name | Reqd. PPE | Critical Safety Hazards | Reactivity | Disposal |
|---|---|---|---|---|
| Potassium ferricyanide | Standard | None | None | Hazardous Waste |
| Potasssium nitrate (1.0 M) | Standard | None | None | Hazardous Waste |

   Altering electrode connections while the cell is turned on may damage the potentiostat.
2. $10\ \text{mL} \times \frac{10\ \text{mmol}}{1\ \text{L}} \times \frac{1\ \text{L}}{1000\ \text{mL}} \times \frac{1\ \text{mol}}{1000\ \text{mmol}} \times \frac{329.26\ \text{g}}{1\ \text{mol}} = 0.032926\ \text{g}$
3. No, the purpose of potassium nitrate is as an electrolyte. It was specifically chosen because it is not redox active; if it was, it would interfere with our measurements. The blank will be a graph along the x-axis with only noise, since there will be no reactions occuring so no current flowing between the working and counter electrode.

4. 


## Part B

1. Same as Part A
2. With a potential more positive than $E^0$, oxidation will occur.
3. $Fe(CN)_6^{4-} \Longrightarrow e^- + Fe(CN)_6^{3-}$
4. 10 mM = $\frac{10\times10^{-3}\ \text{mol}}{1\ \text{L}} \times \frac{1\ \text{L}}{1000\ \text{mL}} \times \frac{1\ \text{mL}}{1\ \text{cm}^3} = 10^{-5}\ \text{mol/cm}^3$

5. $E_0$=0.36 mV. However, we are using a Ag/AgCl electrode as reference, which has a potential of 0.22 mV relative to SHE. Thus, the observed $E^0$ will be 0.14 mV. An appropriate value for X is 0.30 mV. An appropriate value for $\tau$ is between 250-500 ms.