Answer on Question #61801 - Chemistry - General Chemistry

Question

Which would be the cathode and which would be the anode between Ag^+ and Fe^{3+}?

Answer:

If the electrochemical cell works, $E°_{cell} = E^0_{cat} – E^0_{an}$ should be positive ($E°_{cell} >0$).

That's why Ag would be the cathode and Fe would be the anode, because standard reduction potentials of this metals are:

$Ag^+ + e^- = Ag^0$ $E^0=0.80$

$Fe^{3+} + 3e^- = Fe^0$ $E^0=-0.036$

And $E^0_{cell} = E^0_{cat} – E^0_{an} = 0.80 – (-0.036) = 0.836 >0$