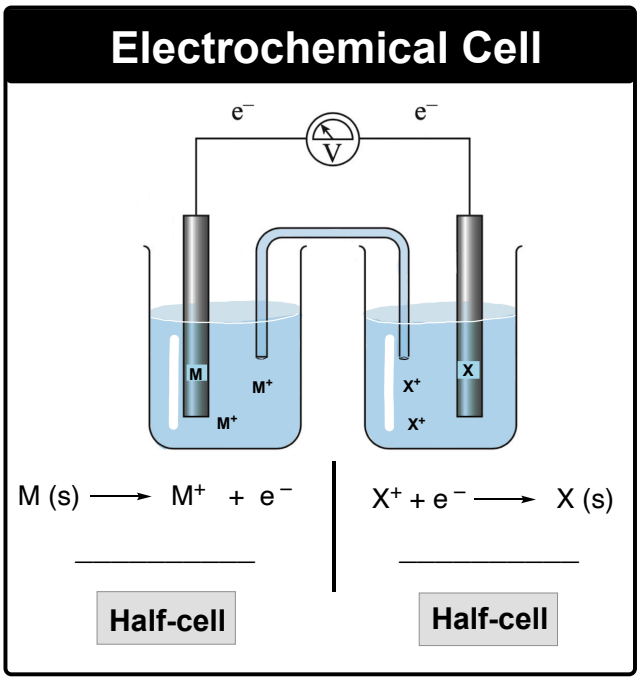
CONCEPT: INTRO TO ELECTROCHEMICAL CELLS

- **Electrochemical Cell**: an instrument composed of 2 *half-cells* connected by a conductive wire.
  - □ **Half-cell:** A container with a single _____ immersed in an **electrolyte solution** representing a half-reaction.
  - □ Through a redox reaction, the transfer of electrons between half-cells _____ or _____ electricity.



- An electrochemical cell has a *cell potential*; _____ (standard conditions) or _____ (nonstandard conditions).
  - □ **Cell Potential**: difference in potential energy as electrons travel between the 2 half cells, measured in _____ (V).
    - Recall: Standard conditions are 25ºC, 1M, 1 atm, pH = 7.
  - □ There are two types of electrochemical cells: (1) _____ electricity, (2) _____ electricity.
    - **Galvanic Cell**: cell with a ___ cell potential meaning electricity is _____.
    - **Electrolytic Cell:** cell with a ___ cell potential meaning electricity is _____.

EXAMPLE: Which of the following electrochemical cells would use up the largest quantity of electricity at 25ºC?

a) Electrochemical Cell A (E°_{cell} = -0.75 V)

b) Electrochemical Cell B (E°_{cell} = +1.30 V)

c) Electrochemical Cell C (E°_{cell} = +0.08 V)

d) Electrochemical Cell D (E°_{cell} = -1.42 V)