

Quiz for Video 7 – Electrochemistry

1. What is the role of a salt bridge in an electrochemical cell?
 - a. To maintain neutral charge as electrons flow from one cell to another
 - b. To safely reduce the cell voltage
 - c. To improve the taste of the cell
 - d. To push the electrons more quickly
2. What is an example of a spontaneous electrochemical cell?
 - a. Charging a battery
 - b. Using a battery to power a device
 - c. A gas can exploding
 - d. The expansion of a liquid
3. What is an example of a non-spontaneous electrochemical cell?
 - a. Charging a battery
 - b. Using a battery to power a device
 - c. A gas can exploding
 - d. The expansion of a liquid
4. When an electrochemical cell is spontaneous, this means the sign of ΔG is:
 - a. Positive (+)
 - b. Negative (-)
 - c. Zero
 - d. undefined
5. What type of chemical reactions are used to power electrochemical cells?
 - a. Double displacement
 - b. Redox
 - c. Combustion
 - d. Synthesis
6. What is one reason the cell notation might be a popular choice?
 - a. It demonstrates that this is a redox reaction
 - b. It emphasizes the reduction and oxidation half-reactions
 - c. It is the only way to distinguish anode from cathode
 - d. It better shows the solids in the reaction
7. When calculating the cell potential, should we multiply the reduction potential by the coefficients in the balanced reaction?
 - a. Yes, to account for the stoichiometry
 - b. Yes, because the half-cell potential will change
 - c. No, because voltage represents the change in energy of electrons and is unaffected by the number transferred
8. What is the half-cell reduction potential for the standard hydrogen electrode (SHE)?
 - a. +1.0 V
 - b. -1.0 V
 - c. 0 V
 - d. +0.268 V
9. What is the purpose of setting the standard hydrogen electrode (SHE) to a certain voltage?
 - a. Voltage is like energy – it only has reference in terms of a change
 - b. No cell works without the SHE
 - c. Platinum is expensive
 - d. Other cells are dangerous without the SHE