



ELECTROCHEMISTRY

QUIZ

1. A cathode and an anode are the most common components of an electrochemical cell. Which of the following claims about the cathode is correct?

- a) Oxidation occurs at the cathode
- b) Electrons move into the cathode
- c) Usually denoted by a negative sign
- d) Is usually made up of insulating material

Answer: b

2. Which of the following claims about electrochemical cells is true?

- a) Cell potential is an extensive property
- b) Cell potential is an intensive property
- c) The Gibbs free energy of an electrochemical cell is an intensive property
- d) Gibbs free energy is undefined for an electrochemical cell

Answer: b

3. Which of the following does not belong in the category of electrochemical cells?

- a) Voltaic cell
- b) Photovoltaic cell
- c) Electrolytic cell
- d) Fuel Cell

Answer: b

4. Which of the following assertions about the main cell is correct?

- a) An example of a primary cell is a mercury cell
- b) An example of a primary cell is a nickel-cadmium storage cell
- c) The electrode reactions can be reversed
- d) It can be recharged

Answer: a

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Answer: a

5. In an Alkaline battery, which of the following is the electrolyte?

a) Potassium hydroxide

b) Sulphuric acid

c) Ammonium chloride

d) Manganese dioxide

Answer: a

6. Which of the following statements about a lead storage cell (or a lead-acid battery) is false?

a) It is a primary cell

b) The cathode is made up of lead(IV) oxide

c) The anode is made up of lead

d) The electrolyte used is an aqueous solution of sulphuric acid

Answer: a

7. The conductivity of electrolytic conductors is due to _____

a) Flow of free mobile electrons

b) Movement of ions

c) Either movement of electrons or ions

d) Cannot be said

Answer: b

8. The process of transmitting electric current through an electrolyte's solution to decompose it is known as _____

a) Electrolyte

b) Electrode

c) Electrolysis

d) Electrochemical cell

Answer: c

9. Which of the following statements is FALSE?

(a) Oxidation and reduction half-reactions occur at electrodes in electrochemical cells.

(b) All electrochemical reactions involve the transfer of electrons.

(c) Reduction occurs at the cathode.

(d) Oxidation is process of gaining of electrons

Answer: d

10. For a voltaic (or galvanic) cell using Ag,Ag^+ (1.0 M) and Zn,Zn^{2+} (1.0 M) half-cells, which of the following statements is incorrect?

- (a) The zinc electrode is the anode.
- (b) Electrons will flow through the external circuit from the zinc electrode to the silver electrode.
- (c) Reduction occurs at the zinc electrode as the cell operates.
- (d) The mass of the zinc electrode will decrease as the cell operates.

Answer: C