

GLOSSARY :

- **Anode** : In a galvanic cell, the half-cell in which oxidation takes place and it has a negative potential with respect to the solution.
- **Battery** : It may have one or more than one cell connected in series.
- **Cathode** : In a galvanic cell, the half-cell in which reduction takes place and it has a positive potential with respect to the solution.
- **Cell Potential** : Potential difference between the two electrodes of a galvanic cell. It is measured in volts.
- **Cell electromotive force (emf)** : The cell potential when no current is drawn through the cell.
- **Conductors** : Substances which having very large conductivity. For example, metals and their alloys, certain non-metals like carbon-black, graphite and some organic polymers.
- **Conductivity** : The conductivity of a solution at any given concentration is the conductance of one unit volume of solution kept between two platinum electrodes with unit area of cross section and at a distance of unit length.

- **Corrosion** : The process in which a metal is oxidized by loss of electrons to oxygen and formation of oxides. Gradually these oxides coat the surfaces of metallic objects. E.g., the rusting of iron, tarnishing of silver, development of green coating on copper and bronze
- **Daniell Cell** : The cell converts the chemical energy liberated during the redox reaction to electrical energy and has an electrical potential equal to 1.1 V.
- **Electrochemistry** : The study of production of electricity from energy released during spontaneous chemical reactions and the use of electrical energy to bring about non-spontaneous chemical transformations.
- **Electrode Potential** : A potential difference develops between the electrode and the electrolyte which is called electrode potential.
- **Electrolytic cell** : A device for using electrical energy (an external source of voltage) to carry non-spontaneous chemical reactions.

- **Fuel Cells** : Galvanic cells that are designed to convert the energy of combustion of fuels like hydrogen, methane, methanol, etc. directly into electrical energy.
- **Faraday** : The quantity of charge present on the one mole of electron is 96487 C mol^{-1} . It is represented by the symbol F .
- **Inert Electrode** : An electrode do not participate in the reaction but provide their surface for oxidation or reduction reactions and for the conduction of electrons. E.g., platinum electrode, gold electrode

OR

It does not participate in the chemical reaction and acts only as source or sink for electrons.

- **Insulators** : Substances having very low conductivity. E.g., glass, ceramics, etc.
- **Limiting Molar Conductivity** : When concentration of electrolytes approaches zero, the molar conductivity is known as limiting molar conductivity and is represented by the symbol Λ_m° .

- **Molar Conductivity** : Molar conductivity of a solution at a given concentration is the conductance of the volume V of solution containing one mole of electrolyte kept between two electrodes with area of cross section A and distance of unit length.
- **Primary Battery** : Batteries in which the reaction occurs only once and after use over a period of time battery becomes dead and cannot be reused again. The most familiar example of this type is the dry cell.
- **Redox couples or Half Cells** : The redox reactions occur in two different portions of the Daniell cell. The reduction half reaction occurs on the copper electrode while the oxidation half reaction occurs on the zinc electrode. These two portions of the cell are also called half-cells or redox couples.
- **Reactive Electrode** : An electrode participates in the electrode reaction. Thus, the products of electrolysis may be different for reactive and inert electrodes.
- **Standard Electrode Potential** : When the concentrations of all the species involved in a half-cell is unity then the electrode potential is known as standard electrode potential.

- **Semi-conductors** : Substances like silicon, doped silicon and gallium arsenide having conductivity between conductors and insulators.
- **Super-conductors** : Certain materials have zero resistivity or infinite conductivity.
- **Secondary Battery** : A secondary cell after use can be recharged by passing current through it in the opposite direction so that it can be used again. A good secondary cell can undergo a large number of discharging and charging cycles. E.g., the lead storage battery