Chapter – 14

Chemical Effects of Electric Current

- On passage of electric current through a solution following chemical effects may be seen:
  (i) Bubbles of a gas on electrodes
  (ii) Deposits of metal on electrodes
  (iii) Change of colour of solution
- **Conduction of Electricity by Liquids**:
  (i) Liquids containing salts, acids or bases conduct electricity.
  (ii) Distilled water does not conduct electricity because it does not have free ions.
  (iii) The liquid which conducts electricity and undergoes decomposition is called the electrolyte.
  (iv) The electrode connected to the positive terminal of battery is called anode while the connected to the negative terminal is called cathode.
- **Electrolysis:** The chemical decomposition of constituents solution on passage of electric current.
- **Electroplating:** It is the process of depositing a thin layer of a metal on any conducting substance by the process of electrolysis.
  The object to be electroplated is made the cathode (negative electrode) by connecting it to the negative terminal of the battery. The metal which has to be deposited is made the anode (positive electrode) by connecting it to the positive terminal of the battery. The electrolyte is usually a salt solution of the metal to be coated.
- **Application of Electroplating:**
  (i) Metals that rust are often coated with other metals to prevent rusting.
  (ii) Chromium plating is found on bath taps, car bumpers, etc. to give a bright attractive appearance and resist scratches and wear.
  (iii) Silver plating is done on cutlery and jewellery items.
- Some liquids are good conductors of electricity and some are poor conductors.
- Most liquids that conduct electricity are solutions of acids, bases and salts.
- The passage of an electric current through a conducting liquid causes chemical reactions.
- The resulting effects are called chemical effects of currents.
- The process of depositing a layer of any desired metal on another material, by means of electricity, is called electroplating.