**Basics of Organic Chemistry**

1. **Definition:**  
   Organic chemistry is the study of compounds containing carbon and hydrogen, often combined with elements like oxygen, nitrogen, and sulphur.
2. **Importance of Organic Chemistry:**
   * Found in daily life (food, medicines, plastics).
   * Essential in industries like pharmaceuticals, agriculture, and energy.
3. **Bonding in Organic Compounds:**
   * Covalent bonding predominates in organic molecules.
   * Carbon forms single, double, and triple bonds.

**Classification of Organic Compounds**

1. **Hydrocarbons:**
   * **Alkanes (Saturated):** Single bonds only, e.g., Methane (CH₄).
   * **Alkenes (Unsaturated):** Contain at least one double bond, e.g., Ethene (C₂H₄).
   * **Alkynes (Unsaturated):** Contain at least one triple bond, e.g., Ethyne (C₂H₂).
2. **Functional Groups:**
   * Alcohols (−OH), Carboxylic acids (−COOH), Amines (−NH₂).
   * Functional groups define the chemical properties of compounds.
3. **Isomerism:**
   * Structural isomerism (Different connectivity).
   * Stereoisomerism (Same connectivity but different spatial arrangement).

**Reactions in Organic Chemistry**

1. **Substitution Reactions:**  
   An atom or group is replaced by another.  
   Example: Halogenation of alkanes.
2. **Addition Reactions:**  
   Atoms are added across a double or triple bond.  
   Example: Hydrogenation of alkenes.
3. **Elimination Reactions:**  
   A molecule loses atoms, forming a double bond.  
   Example: Dehydration of alcohols.