# MIND MAP

**(i) Pure Substances:** Contains only one kind of particles.

- **Elements:** Cannot be broken down to simpler substances. Eg. Hydrogen, Copper, Oxygen etc.
  - **Metals:** Lustrous, Hard, Malleable, Ductile, Sonorous, Conductor of heat & electricity. Eg. Iron, Copper
  - **Non-Metals:** Non-Lustrous, Soft, Non-Malleable, Non-Ductile, Non-Sonorous, Non-conductor of heat & electricity. Eg. Carbon, Nitrogen
  - **Metalloids:** Show some properties of metals & some properties of non-metals. Eg. Boron, Silicon etc.
- **Compounds:** Have fixed composition and can be broken down into elements by chemical or electro-chemical reactions. Eg. Water, Sugar etc.

**(ii) Mixtures:** Contains two or more different kinds of particles.

- **Homogeneous:** (Solutions) Uniform composition. Eg. Salt in water alcohol etc.
  - **Solution:**
    - Homogeneous mixture
    - Particles cannot be seen with microscope.
    - Stable
    - Cannot be separated by filter paper.
    - Does not scatter beam of light
    - Eg. Sea water lemonade, soft drinks.
- **Heterogeneous:** (Suspension and Colloids) Non-uniform composition. Eg. Water in oil, blood etc.
  - **Suspension**
    - Heterogeneous mixture
    - Particles can be seen with naked eyes
    - Unstable
    - Can be separated by filter paper.
    - Scatters beam of light
    - Eg. Muddy water, Chalk- water mixture
  - **Colloid**
    - Heterogeneous mixture
    - Particles can not be seen with microscope.
    - Stable
    - Cannot be separated by filter paper.
    - Scatters a beam of light (Tyndall effect)
    - Eg. Mist, fog, butter

**Change in matter**

**Physical change**

- No new substance is formed.
- Temporary.
- Reversible.

**Chemical change**

- New substance is formed.
- Permanent
- Irreversible.

- **Saturated Solution:** In which more quantity of solute can be dissolved without raising its temperature.
- **Unsaturated solution:** In which no more solute can be dissolved at that temperature.