1. **Tissue** is a group of cells having similar origin, structure& function. Study of tissues is called **Histology**
2. In unicellular organism (Amoeba) single cell performs all basic functions, whereas in **multi-cellular organisms** (Plants and Animals) shows **division of labor as Plant tissue & Animal tissues.**
3. Plant tissues are two types: Meristems & Permanent tissues.
4. **Meristems:** The Meristems are the tissues having the power of cell division. It is found on those region of the plant which grows.
5. Types of Meristems;

    1. **The Apical meristems – It is present** at the growing tip of the stem and roots and increases the length.
    2. **The lateral meristems - present** at the lateral side of stem anf root (cambium) and increases the girth.
    3. **The intercalary meristems - present** at internodes or base of the leaves and increases the length between the nodes.

(Please refer to Fig. 6.2: location of meristems in plant body , NCERT Book Page- 69).

26. **Permanent tissues:** Two types such as Simple permanent tissues & Complex permanent tissues.

a) **Simple permanent tissues:** subdivided as

(i): **Parenchyma:** Tissues provide the support to plants.They are loosly packed and has large intracellular space.

- Parenchyma with chlorophyll which performs photosynthesis is called as chlorenchyma.
- The parenchyma with large air spaces to give buoyancy is called as aerenchyma .Parenchyma also stores food and water.

(ii) **Collenchyma**: Tissue provides mechanical support, thickened at the corners, have very little intercellular space. It allows easy bending of various parts of a plants without breaking

(iii) **Sclerenchyma**: Tissue makes the plant hard and stiff, thickened due to lignin and no intercellular space. Cells of this tissue are dead and commonly seen in the husk of coconut.

(iv) **Guard cells& Epidermal tissue**: the tissue aids in protection and exchange of gases. Guard cells kidney shaped in dicots, dumb bell shaped in monocots to guard the stomata. The epidermal tissues of roots aid in absorption of water and minerals. The epidermal tissues in desert plants have a thick waxy coating of Cutin with waterproof quality. The epidermal tissues form the several layer thick Cork or the Bark of the tree.

(Please refer to Fig. 6.3- 6.6, NCERT Book Page-70-73).

b) **Complex permanent tissues:** The complex tissues are made of more than one type of cells. All these cells coordinate to perform a common function.

They are subdivided as;

Xylem: It consists of tracheids, vessels, xylem parenchyma and xylem fibers. The cells have thick walls,

Function - aids in conduction of water and minerals.

Phloem: It consists of sieve tubes, companion cells, phloem parenchyma, and phloem fibers.

Function - Phloem transports food material to other parts of the plants.