

Ch-6 Tissues

1. **Plant tissues** – On the basis of dividing capacity, plant tissues are of two types –
 - a. **Meristematic tissue** – It consists of actively dividing cells. Meristematic tissues have three types –
 - i. **Apical meristem** – present at the growing tips of stems and roots and helps in increasing the length of stem and roots.
 - ii. **Intercalary meristem** – present at the base of the leaves. It is required for longitudinal growth of plants.
 - iii. **Lateral meristem** – present on the lateral side of stem and roots and helps to increase the length of stem and roots.
 - b. **Permanent tissue** – It is formed from the meristematic tissues, the cells in this tissue lose the ability to divide. They are further divided into –
 - i. **Parenchyma** – It is composed of unspecialized living cells with relatively thin cell walls, intercellular space, present in soft part of the plants.
 - ii. **Collenchyma** – Composed of living and elongated cells with cell walls irregularly thickened at the corners. There is no inter-cellular space. It helps in bending of leaves and stems.
 - iii. **Sclerenchyma** – It is composed of long narrow, thick-walled cells. It is made of dead cells and there are no inter-cellular cells.
 - iv. **Complex permanent tissue** – It is made up of more than one type of cells.
2. **Animal tissues** – Animal tissues are divided into four types based on the functions performed by them.
 - a. **Epithelial tissues** – They form the covering of the external surfaces, internal cavities and organs of the animal body. These are various types of epithelial tissues –
 - i. Simple squamous epithelium
 - ii. Cuboidal epithelium
 - iii. Columnar epithelium
 - b. **Connective tissues** – They connect various organs of the body. They are further divided into –
 - i. Areolar tissue
 - ii. Adipose tissue
 - iii. Dense regular connective tissue
 - iv. Skeletal tissue
 - c. **Muscular tissue** – Muscular tissue provides movement to the body. They are divided into three types –
 - i. Striated / skeletal / voluntary muscles
 - ii. Smooth / involuntary muscles
 - iii. Cardiac muscles
 - d. **Nervous tissue** – These are present in brain, spinal cord and nerves. Neurons are cells of nervous tissue which consist of a cell body, axon and dendrite.