Plant tissues

1. Meristematic tissues:

Characteristics:
- The cells are similar in structure and have thin cell walls.
- The cells are compactly arranged and do not contain any intercellular space between them.
- Each meristematic cell contains a single large nucleus.

Location: At tips of roots and stems.

Function: Are responsible for the division of new cells... they are zones of actively dividing cells.

2. Parenchyma and collenchyma cells:

A- Parenchyma cells:

Characteristics:
- Have thin and somewhat flexible cell walls.
- Living at maturity.
- Carry out most of the plant’s metabolic functions.
- Generally have central large vacule.

Location: in all plant parts.

Function: storage.
B- Collenchyma Cells:

Characteristics:

- Thicker primary cell walls (usually uneven thickness).
- Living at maturity.

Location: are most often found adjacent to outer growing tissues, the vascular cambium.

Function: support.

3. Sclerenchyma cells:

Characteristics:

- Have thick secondary cell walls.
- Dead at functional maturity.
- Are of two types:

A- Fibers: provide for rigid support in wood (e.g., bark) and other parts and are typically nonliving cells.
B- Sclereids: variously shaped and densely packed as in nut shell or other seed coats.

Functions:

- Sclerenchyma is an important supporting tissue in plants.
- Sclereids are responsible for the hardness of shell of walnut.
- Fibers probably play a role in the transport of water in the plant.
- Starch granules are stored in the young, living fibers.