

9th Class

➤ Animal Tissues

❖ Introduction:

- Tissues are groups of cells with similar structures and functions.
- Animal tissues are classified into four main types: epithelial, connective, muscular, and nervous tissues.

1. Epithelial Tissue:

- Location: Covers body surfaces, lines body cavities, and forms glands.
- Functions: Protection, secretion, absorption, and excretion.
- Types: Squamous (flat), cuboidal (cube-shaped), columnar (column-shaped), and transitional (variable shape).

2. Connective Tissue:

- Location: Found throughout the body, providing support and connecting other tissues.
- Functions: Support, protection, insulation, and transportation.
- Types: Loose connective tissue (e.g., adipose tissue), dense connective tissue (e.g., tendons and ligaments), cartilage, bone, blood, and lymph.

3. Muscular Tissue:

- Location: Found throughout the body attached to bones, walls of organs, and blood vessels.
- Functions: Movement, posture maintenance, heat generation, and organ contractions.
- Types: Skeletal muscle (voluntary movement), smooth muscle (involuntary movement), and cardiac muscle (found in the heart).

4. Nervous Tissue:

- Location: Found in the brain, spinal cord, and peripheral nerves.
- Functions: Transmitting and receiving nerve impulses, coordinating body activities, and providing sensory perception.
- Components: Neurons (nerve cells) and neuroglial cells (supporting cells).

❖ **Comparison of Tissues:**

- Epithelial tissue forms protective barriers, whereas connective tissue provides structural support.
- Muscular tissue enables movement, while nervous tissue controls and coordinates body functions.

❖ **Tissue Repair and Regeneration:**

- Tissues have varying capacities for repair and regeneration.
- Epithelial and connective tissues have high regenerative abilities, while nervous and muscular tissues have limited regenerative capacities.

❖ **Conclusion:** Understanding animal tissues is crucial for comprehending the structure and function of the human body. Each tissue type plays a unique role in maintaining homeostasis and supporting overall health.