

HUMAN ANATOMY AND PHYSIOLOGY-I, BP-101(T)

UNIT-I (Introduction to human body)

CLASS:8

TOPIC – Tissue level of organisation, classification

- The human body has many levels of structural organization.
- The simplest level is the chemical level, which includes tiny building blocks such as atoms.
- Cells are the smallest functional units of life. The simplest living creatures are single cell creatures, but in complex life forms, such as human beings, cells also exist in the tissue level.
- Tissues are groups of similar cells that have a common function. The four basic tissue types are epithelial, muscle, connective, and nervous tissue. Each tissue type has a characteristic role in the body:
 1. Epithelium covers the body surface and lines body cavities.
 2. Muscle provides movement.
 3. Connective tissue supports and protects body organs.
 4. Nervous tissue provides a means of rapid internal communication by transmitting electrical impulses.

Organs: Made of Tissues:

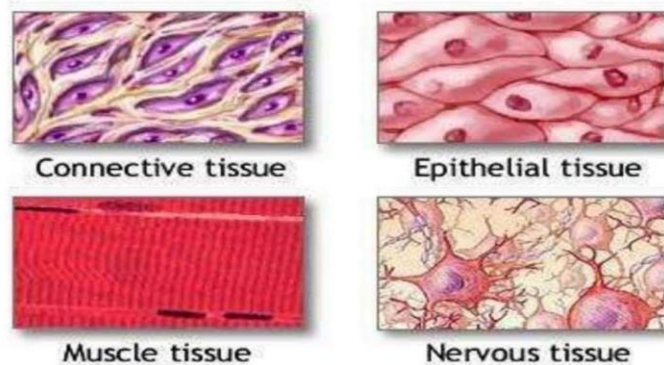
5. An organ is a structure that is composed of at least two or more tissue types and performs a specific set of functions for the body. The liver, stomach, brain, and blood are all different organs and perform different functions. Each organ is a specialized functional center responsible for a specific function of the body.
6. At the organ level, complex functions become possible because of the specialized activities of various tissues. Most organs contain more than one tissue type. For example, the stomach consists of smooth muscle tissue for churning movement while it is innervated, but it is also supplied by blood, which is a connective tissue.
7. The next level is the organ system level. Many organs working together to accomplish a common purpose create an organ system. For example, the heart and the blood vessels of the cardiovascular system circulate blood and transport oxygen and nutrients to all the body cells.

Tissues of the human body

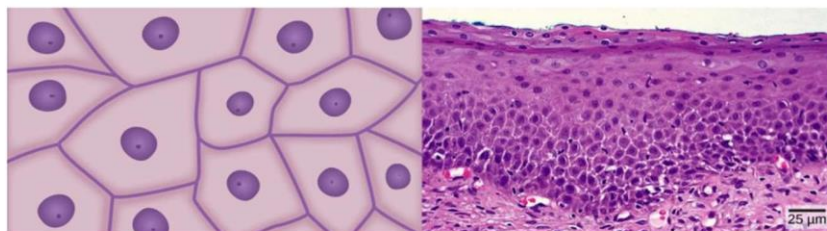
Tissue is a group of cells which have similar structure and perform relatively one or more common functions.

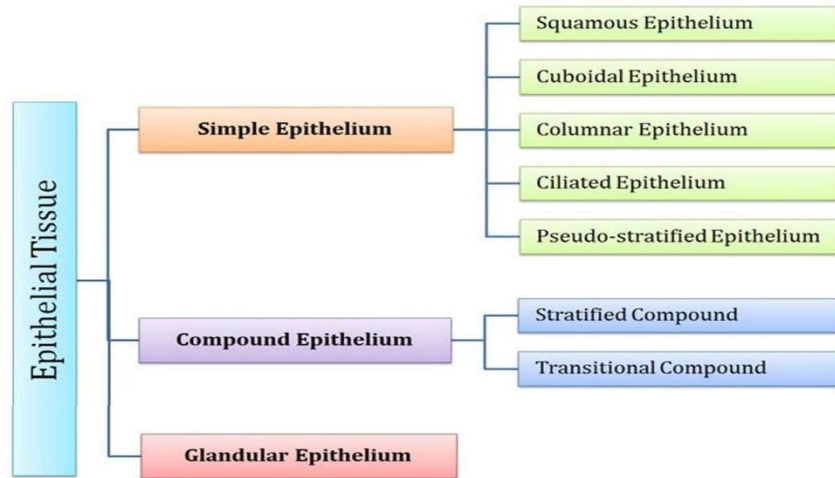
There are four basic tissue types defined by their morphology and function: epithelial tissue, connective tissue, muscle tissue, and nervous tissue.

Four types of tissue

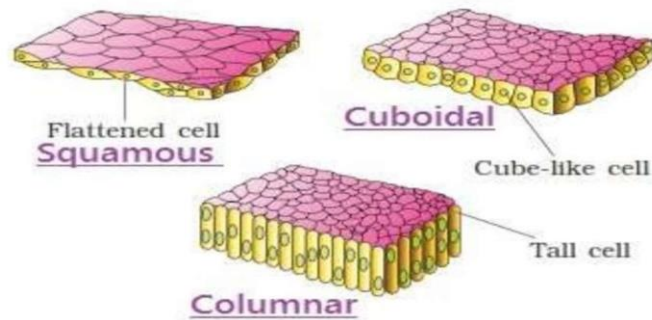


Epithelial tissue: is made up of epithelial cells, which are vastly different from the muscle cells we just talked about. These cells can be flat, cuboidal, or columnar. They are joined tightly together, making a single or stacked continuous sheet. Like a quilt that is tightly stitched, epithelium makes an excellent protective cover for the body, in the form of skin. Epithelial tissue can also be found lining some internal cavities and organs.





Simple epithelium tissue structure: -



IMPORTANT QUESTIONS:

2M QUESTIONS:

1. Define Anatomy and Physiology along with its scope.
2. Define Homeostasis.
3. What is feedback system.
4. Define cell. Write the functions of mitochondria.
5. Differentiate mitosis and meiosis.
6. Differentiate Phagocytosis and Pinocytosis.
7. Define: 1. Facilitated transport 2. Osmosis transport.

8. Differentiate exocrine and endocrine signaling.
9. Define Autocrine and Juxtacrine signaling.
10. Define tissue and its types with examples.

5M QUESTIONS:

- 1) Draw a labelled diagram cell showing its cell organelles and their function.
- 2) Define tissue and its types in detail.
- 3) What is cell cycle and explain in detail.
- 4) What is cell division and explain its types.
- 5) What are different cell junctions.
- 6) Explain cell signaling and cell communication.
- 7) What is homeostasis and explain its feedback mechanism

10 M QUESTIONS:

1. Define tissue and its types in detail.
2. What are different cell junctions.
3. Explain cell signaling and cell communication.