

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

UNIT-I (Introduction to human body)

CLASS:10

TOPIC – Structure, location and functions of Nervous tissues and Connective tissues.

CONNECTIVE TISSUE:

It's developed from mesoderm. They are of many types.

a) Areolar Tissue:- Transparent jelly like matrix is found. It contains various of cells like fibroblasts, histocytes, basophiles cells, plasma cells, mast cells, pigment cells, mowlytes.

Two type's fibres are present:

White fibre-Fine, wavy flexible and un branched made up of collagen proteins.

Yellow fibre- They are thick, straight, flexible, elastic and branched made up of elastic protein.

Function:- It connects the skin with muscle, blood vessels and nerves with the surrounding tissue, serve as packing material.

b) Adipose tissue:- It's made up of large round (or) oval flat cells containing fat droplets and fat globules. It's of 2 types.

(i) White adipose tissue (ii) Brown adipose tissue .Matrix contains fibroblasts, macrophages and fibres.

Location:- Sub-Cutaneous areas, mesentery.

Function:- Stores energy in the form of fat, gives shape to the limbs and Body. Regulation of body Temperature.

c) White fibrous tissue:- It consists of white collagen fibres. The tissue is tough and inelastic due to presence of proteins called collagen.

Location:- It forms tendons, ligaments, articular capsule, capsule etc.,

d) Yellow elastic tissue:-It's atype of proper connective tissue.

Fibres are straight, flexible, elastic and occur single and made up of elastic protein. They are thicker, branched and yellow in colour.

Location:- Lungs, walls of blood vessels, bronchioles,etc.

Function:- Provides strength, movement of organs and also in expiration.

e) Reticular tissue:- It consists of reticular cells and reticular fibres.

- Reticular fibres are thinner than white fibres and branched.
- It's a member of reticular endothelial systems made up of reticular protein.

➤ Location:- Spleen, lymph gland, liver, bone marrow, etc.

➤ Function:- The cells are phagocytic and provide defence to the body.

Nervous Tissue:

Nervous or the nerve tissue is the main tissue of our nervous system. It monitors and regulates the functions of the body. Nervous tissue consists of two cells: nerve cells or neurons and glial cells, which helps transmit nerve impulses and also provides nutrients to neurons. Brain, Spinal Cord, and nerves are composed of nervous tissue, they are specialized for being stimulated to transmit stimulus from one to another part of the body rapidly.

Structure Of Nervous Tissue:

- It is made of nerve cells or neurons, all of which consists of an axon. Axons are long stem-like projections emerging out of the cell, responsible for communicating with other cells called the Target cells, thereby passing impulses
- The main part is the cell body which contains the nucleus, cytoplasm and cell organelles. Extensions of the cell membrane are referred to as processes.

- Dendrite is a highly branched processes, responsible for receiving information from other neurons and synapses (specialized point of contact). Information of other neurons is provided by dendrites to connect with its cell body.
- Information in a neuron is unidirectional as it passes through neurons from dendrites, across the cell body down the axon.

Characteristics Of Nervous Tissue:

- Nervous tissue makes up for the CNS and PNS of the nervous system
- Contains two distinct cells – neurons and glial cells
- It consists of the dendrites, cell body, axon and nerve endings.
- Neurons secrete chemical neurotransmitters which are responsible for stimulating other neurons as a result of a stimuli
- Presence of specialization at axonal terminals called synapsis
- Nerve cells live long, cannot be divided and replaced(except memory cells)

Function Of Nervous Tissue:

- Neurons generate and carry out nerve impulses. They produce electrical signals that are transmitted across distances, they do so by secreting chemical neurotransmitters.
- Responds to stimuli
- Carries out communication and integration
- Provides electrical insulations to nerve cells and removes debris
- Carries messages from other neurons to the cell body.

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.