

Nervous Tissue

- * Nervous tissue: structural and functional unit - neuron.
- * Parts of a neuron and their functions.
- * Functions of nervous tissue.

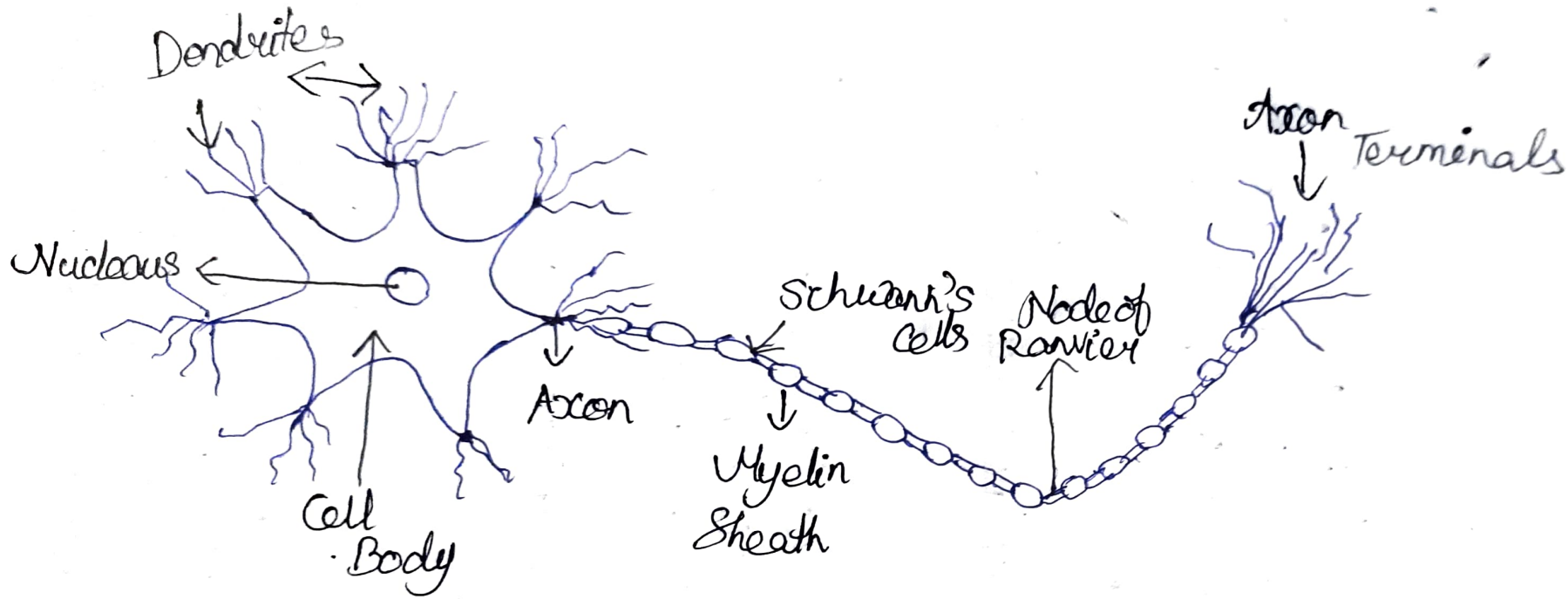
Dendrites :-

- * They are tree-like extensions (highly branched) at the beginning of a neuron.
- * They receive chemical signals from different neurons of the body.
- * They then convert these chemical signals into electrical signals and pass them to the neuron cell body.

2. Cell Body :-

- * Also called Soma or Cyton.
- * The main function of the cell body and nucleus of the neuron is to maintain the functionality of the cell.
- * It does not play an active role in the transmission.

Structure of a typical Neuron



of the signal.

* It produces proteins that are required by different parts of the neuron to work properly.

It contains different cell organelles such as mitochondria, Golgi apparatus etc. that perform various functions of the cell.

Axon

* It is a long structure that connects the cell body to the terminals and it also connects with other neurons, cells and organs of the body through nerve terminals.

* It allows in fast transmission of signals, The larger the diameter of the axon the faster it will transmit signals.

* It is covered with a special insulating substance called myelin. It helps in rapid transmission of signals.

Synapse :- In the nervous system, a synapse is a junction that permits a neuron (or nerve cell) to

pass an electrical or chemical signal to another neuron or to the target effector cell. Here neurotransmitters are present which are chemicals that helps to convert electrical signals to chemical messenger.

Home assignments

Q.1. What are the different parts of a neuron? Mention the functions of each.

Ans. The different parts of a neuron are dendrites, cell body (nucleus), axon, synapse. Dendrites help in transmission of messages to the cell body. Cell body maintains the functionality of the cell. Axon helps in fast transmission of signals. Synapse helps in passing an electrical or chemical signal to the target effector cell.

Q.2. How Nervous tissue works? Elaborate.

Ans. The nervous tissue is found in the brain, spinal cord, and nerves. It receives stimuli and send signals to the brain and spinal cord.

Q.2. Define Synapse ?

Ans. Synapse is a junction between two nerve cells that permits a neuron to pass an electrical or chemical signal to another neuron or the target effector cell.

Review Questions

Multiple Choice Questions

1. (i) A group of similar cells to perform a specific function forms a

- | | | | |
|-----------------|--------------------------|------------|-------------------------------------|
| a) organ | <input type="checkbox"/> | b) species | <input type="checkbox"/> |
| c) organ system | <input type="checkbox"/> | d) Tissue | <input checked="" type="checkbox"/> |

(ii) The small fine branches given out from the cell body of a nerve cell are :-

- | | | | |
|--------------|-------------------------------------|------------|--------------------------|
| a) dendrites | <input checked="" type="checkbox"/> | b) cyton | <input type="checkbox"/> |
| c) axon | <input type="checkbox"/> | d) neurons | <input type="checkbox"/> |

(iii) Fluid connective tissue of humans is

- a) blood and cartilage b) lymph and plasma
c) blood and lymph d) stroma & matrix

Short answer Questions

1. Define the following terms:

(i) Tissue: A group of cells, which are similar in structure, and perform a specific function, form a tissue.

(ii) Organ: The group of tissue combines to form an organ.

2. Answer the following:

(i) What is a meristematic tissue? How is it different from permanent tissues?

Ans. Meristematic tissues are cells or group of cells that have the ability to divide. Meristematic cells can be divided into individual whereas permanent tissues cannot be divided.

(ii) Which living material would you take to demonstrate

meristematic tissue ?

Ans. We could take the example of sprout of seed to demonstrate meristematic tissue.

(iii) What is the function of meristematic tissue ?

Ans. Meristematic tissue divide actively to form specialized structures such as buds of leaves, tips of roots and shoots etc.

3. State True or False.

(i) _____ True

(ii) _____ False

(iii) _____ False

(iv) _____ True

(v) _____ False

4. Fill in the Blanks.

(i) _____ Tissues

(ii) _____ conducting

(iii) _____ vascular

(iv) _____ Collenchyma

v) Thin-walled

5. Match the following

i - d

ii - a

iii - b

iv - c

v - e

6. i) Amoeba - Organism

(ii) Euglena : Organism

(iii) Skin : Organ

(iv) Lungs : Organ

(v) Neuron : Cell

(vi) Cardiac Muscles : Tissue

7. Match the following.

i - b

ii - iv (d)

iii - v (e)

iv - iii (c)

v - i (a)