

Neural Control and Coordination



TRY YOURSELF

ANSWERS

- Four components of neural tissue are:
(i) Neurons (ii) Neuroglia (iii) Ependymal cells and (iv) Neurosecretory cells.
- No, sponges (poriferans) are the only multicellular organisms without a neural system. They do not have any sensory cells (nerve cells). However, pressure or touch to the body will cause a local contraction.
- Differences between axon and dendron are as follows :

Characteristic feature		Axon	Dendron
(i)	Structure	It is formed of neuroplasm with only neurofibrils, but no Nissl's granules.	It is formed of neuroplasm with both neurofibrils and Nissl's granules.
(ii)	Number	It is always one.	It may be one or more.
(iii)	Direction of nerve impulse	Always away from the cell body.	Always towards the cell body.

- Inhibitory neurotransmitters have inhibitory effects on the neuron. This means they decrease the likelihood that the neuron will fire an action potential. Some of the major inhibitory neurotransmitters include Gamma-amino butyric acid, dopamine, serotonin and glycine.
- Pre-central motor area, frontal association area and

Broca's motor speech area are the functional areas of cerebrum that are situated in the frontal lobe of human brain.

6. Size : The spinal cord is about 45 cm in males and about 43 cm in females.

Location : It is located in the vertebral canal of the vertebral column, extending from medulla oblongata upto level of second lumbar vertebra.

Function : The spinal cord conducts sensory and motor impulses to and from the brain *via* sensory ascending tracts and motor descending tracts.

7. Corpus callosum

8. The afferent nerve fibres transmit impulses from tissue/organs to the CNS, while the efferent nerve fibres transmit regulatory impulses from the CNS to the concerned peripheral tissues/organs. The first one is sensory, while the later is motor in nature.

9. Autonomous neural system (ANS) is composed of two opposing (antagonistic) divisions; namely sympathetic and parasympathetic neural systems.

Organs		Sympathetic division	Parasympathetic division
(i)	Arteries	Constricts arteries and raises blood pressure.	Dilates arteries and lowers blood pressure.
(ii)	Digestive tract	Slows peristalsis, decreases activity.	Speeds peristalsis and increases activity.

