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Question 1:

What is the difference between a reflex action and walking?

Answer 1:

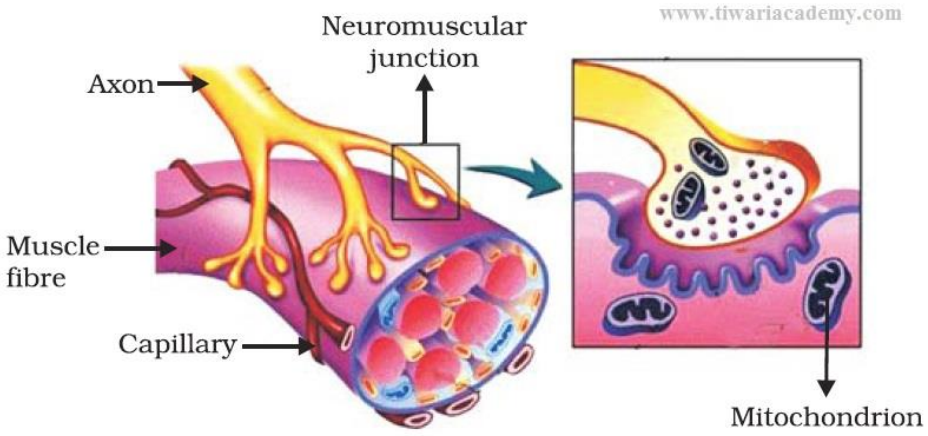
- *A reflex action* is a rapid, automatic response to a stimulus. It does not involve any thinking. For example, we close our eyes immediately when the bright light is focused.
- *Walking*, on the other hand, is a voluntary action. It is under our conscious control.

Question 2:

What happens at the synapse between two neurons?

Answer 2:

A very small gap that occurs between the last portion of axon of one neuron and the dendrite of the other neuron is known as a synapse. It acts as a one way valve to transmit impulses in one direction only.



This one-directional transfer of impulses occurs as the chemicals are produced in only one side of the neuron i.e., the axon's side. From axon, the impulses travel across the synapse to the dendrite of the other neuron.

Question 3:

Which part of the brain maintains posture and equilibrium of the body?

Answer 3:

Cerebellum, a part of hindbrain is responsible for maintaining posture and equilibrium of the body.

Question 4:

How do we detect the smell of an agarbatti (incense stick)?

Answer 4:

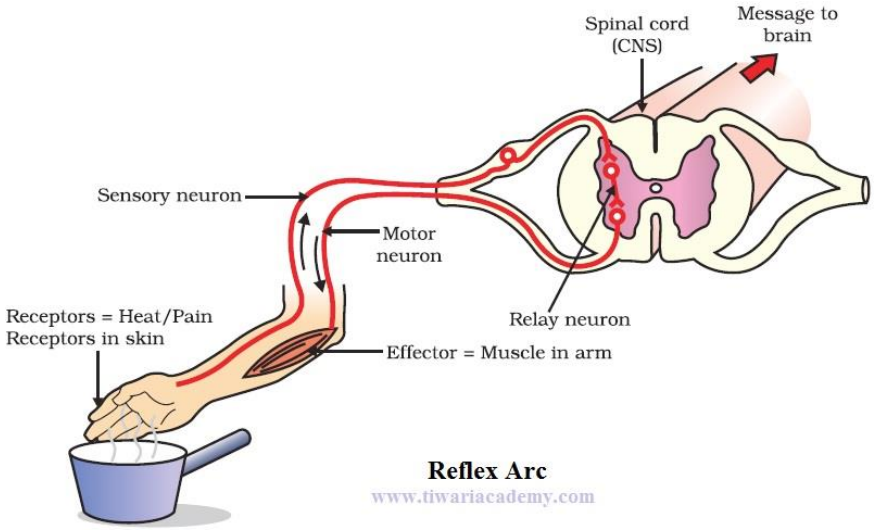
The thinking part of our brain is the forebrain. It has separate areas that are specialized for hearing, smelling, sight, taste, touch, etc. The forebrain also has regions that collect information or impulses from the various receptors. When the smell of an incense stick reaches us, our forebrain detects it. Then, the forebrain interprets it by putting it together with the information received from other receptors and also with the information already stored in the brain.

Question 5:

What is the role of the brain in reflex action?

Answer 5:

Reflex actions are sudden responses, which do not involve any thinking. For example, when we touch a hot object, we withdraw our hand immediately without thinking as thinking may take time which would be enough to get us burnt. The sensory nerves that detect the heat are connected to the nerves that move the muscles of the hand. Such a connection of detecting the signal from the nerves (input) and responding to it quickly (output) is called a reflex arc. The reflex arcs –connections present between the input and output nerves − meet in a bundle in the spinal cord.



Reflex arcs are formed in the spinal cord and the information (input) reaches the brain. The brain is only aware of the signal and the response that has taken place. However, the brain has no role to play in the creation of the response.