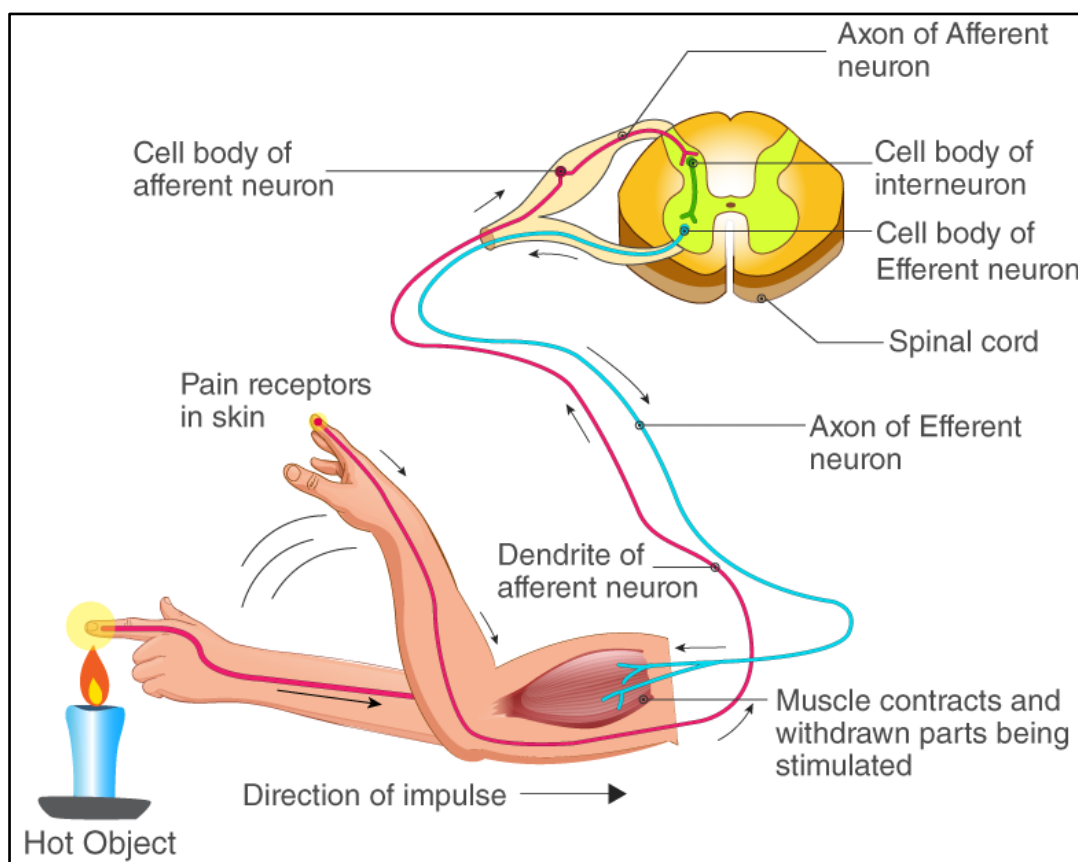


*Name of the student:* ..... *Date:* 22/10/2020

### Reflex Action:

Reflex is an involuntary and sudden response to stimuli.

- In a reflex action, the signals do not route to the brain – instead, it is directed into the synapse in the spinal cord, hence the reaction is almost instantaneous.
- Two neurons dominate the pathway, afferent nerves (receptor) and the efferent nerves (effector or excitor)



Below is a brief description of the events that take place:

- The first event begins with the receptor detecting a stimulus from a sensory organ. The stimulus could be in the form of pressure, temperature or chemicals.
- This is followed by the sensory neuron sending a signal to the relay neuron.
- The relay neuron then sends the signal to the motor neuron.
- The motor neuron sends a signal to the organ or a cell that acts to the stimuli called the effector.
- Finally, the effector produces an instantaneous response, such as pulling away of the hand or a knee-jerk reaction.

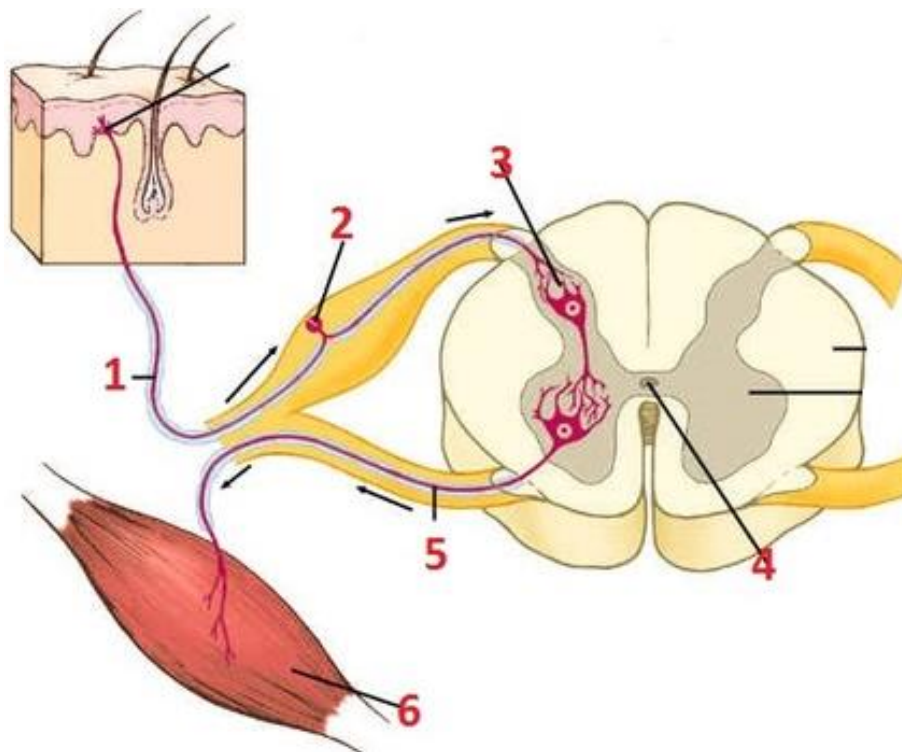
## Reflex Arc:

A reflex arc is a neural pathway that controls a reflex.

A reflex arc has the following constituents: —

- 1) receptor (sensory organ)
- 2) sensory (afferent) nerve
- 3) interneurons
- 4) motor (efferent) nerve and
- 5) effector organ.

**Q. Complete the following reflex arc by writing the correct name next to the number.**



**Q. What is the difference between afferent neuron and efferent neuron?**

.....

.....

.....

.....

**Q. What does it mean if your reflexes are absent?**

What does it mean if someone's reflexes are absent?



Ans:

**Brain is not involved in reflex action:**

It is because in vertebrates, most sensory neurons do not pass directly into the brain, but synapse in the spinal cord. This allows for faster reflex actions to occur by activating spinal motor neurons without the delay of routing signals through the brain. The brain will receive the sensory input while the reflex is being carried out and the analysis of the signal takes place after the reflex action.

**Q. Imagine you were hit in the knee all of a sudden. Describe with pictures how will you feel that?**