

The diagram below shows the FUNCTIONAL UNIT of the nervous system which is called the Reflex action

Give the LABELS and FUNCTIONS of the parts labelled A to E on the diagram below.

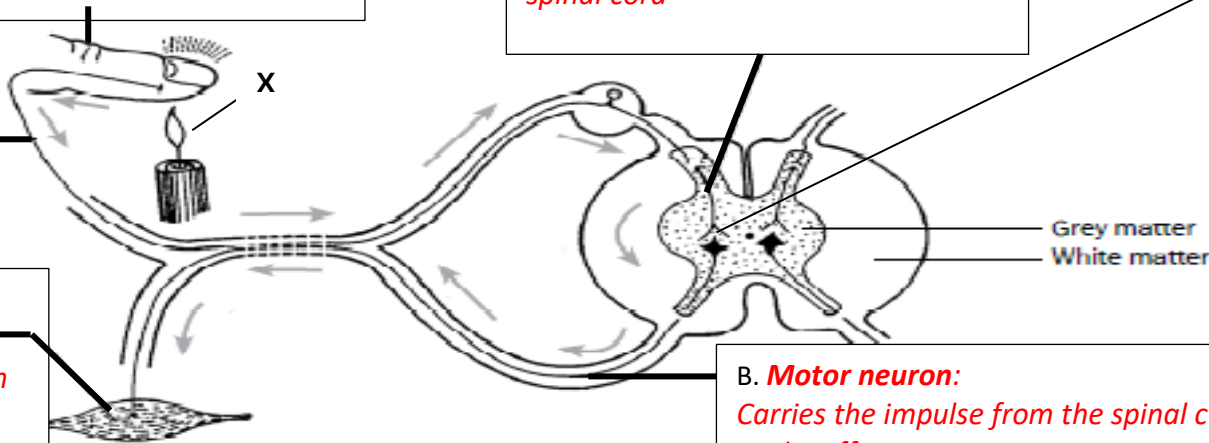
E. **Receptor:**
A structure which receives a stimulus and converts it into an impulse (the heat sensor of the finger feels burn)

A. **Interneuron/Connector neuron:**
Carries the impulse from sensory neuron to the motor neuron in the spinal cord

D. **Sensory neuron:**
Carries the impulse from the receptor to the spinal cord

C. **Effector:**
A structure which produces the reaction (the muscles in the finger contract and the finger is pulled away)

B. **Motor neuron:**
Carries the impulse from the spinal cord to the effectors



The microscopic gap between consecutive neurons is called a Synapse

What is the significance of this gap?
Allows the movement of impulses in one direction only (from the sensory to the motor neuron)

Mention THREE examples of reflex actions
• Move hand/foot away from a needle/flame
• Breathing; Heartbeat; Blinking
• Knee jerk

- Give the label of the part indicated with an X on the diagram

Stimulus / Heat stimulus

- Give a brief description of the part marked X.

Heat stimulus causes the receptor to generate an impulse (due to a change in the external environment)

- Define the following terms:

NB!!

- Reflex arc : the path along which an impulse is transmitted to bring about a response to a stimulus during a reflex action.

- Reflex action : A quick, automatic response to an external stimulus

- which involves the spinal cord and not involve the brain.

- What is the importance of a reflex action?

It is an important function to protect the body from harm.

- The structural units of the nervous system are called Reflex arc

- Explain the consequence if the structural unit labelled D was damaged. Impulse won't be able to move to the interneuron
The person won't be able to feel the stimulus

- Explain the consequence if the structural unit labelled B was damaged.
The impulse won't be transmitted to the effector. The person won't be able to move/respond to the stimulus.
The person will feel the stimulus but won't be able to respond/move...

- Make a labelled diagram of the structural unit labelled D on the diagram above. **Sensory neuron / afferent Neuron**

