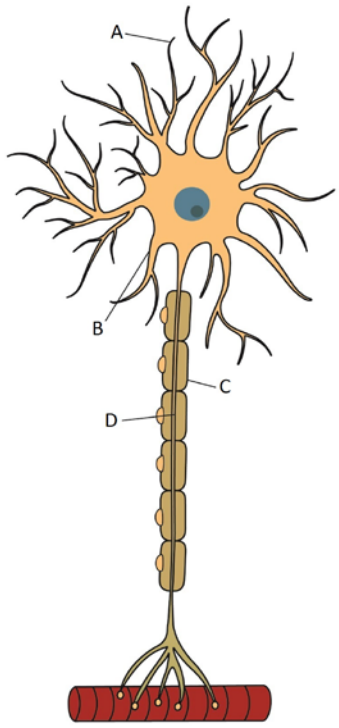
Title: Biopsychology

Topic: The structure and function of sensory, relay and motor neurons. The process of synaptic transmission, including reference to neurotransmitters, excitation and inhibition.

Q1	**True or false?**	
A	Motor neurons carry messages to the peripheral nervous system.	
B	Excitation makes a presynaptic neuron more likely to fire.	
C	Sensory neurons carry messages to the spinal cord and brain.	
D	Inhibition makes a postsynaptic neuron less likely to fire.	

Q2	**Label the neuron**
Label the neuron using the key terms below and answer the additional questions.	
	▪ A = ▪ B = ▪ C = ▪ D = Key terms: **Cell body, Myelin sheath, Axon, Dendrite.** Which type of neuron is shown in this picture? A) Sensory neuron B) Relay neuron C) Motor neuron Outline one difference between the type of neuron shown in this picture and one other type of neuron (2 marks).

Q3	**Sensory, Relay or Motor Neuron?**	
Which of the following descriptions bests describes a: sensory, relay or motor neuron.		
are found in receptors such as the eyes, ears, tongue and skin, and carry nerve impulses to the spinal cord and brain. These nerve impulses are translated into 'sensations'.		
are found in the central nervous system (CNS) and control muscle movements.		
are found in between sensory input and motor output/response. These neurons are found in the brain and spinal cord.		

Q4 Match them up

Match up the key neuron/neurotransmitter terms on the left, with the correct description on the right.

COMPONENT	DESCRIPTION
Dendrite	Insulates the axon so that the electrical impulses travel faster along the axon.
Axon	Receives a signal from other neurons or sensory receptor cells. This part of the neuron is typically connected to the cell body.
Myelin sheath	Connects the neuron to other neurons (or directly to organs), using a process called **synaptic transmission**.
Axon terminal	a long slender fibre that carries nerve impulses, in the form of an electrical signal known as **action potential.**
Action potential	Information which is passed down the axon of the neuron as an **electrical impulse**

Q5 Apply your knowledge

Answer the following application question.

Rhiannon is comparing the effects of smoking and drinking. She discovers that nicotine is a stimulant which produces an excitatory effect on the postsynaptic neuron, causing the release of dopamine, whereas alcohol interacts with GABA receptors which produces an inhibitory effect. **With reference to smoking and drinking, outline what is meant by the term excitation and inhibition. (4 marks).**