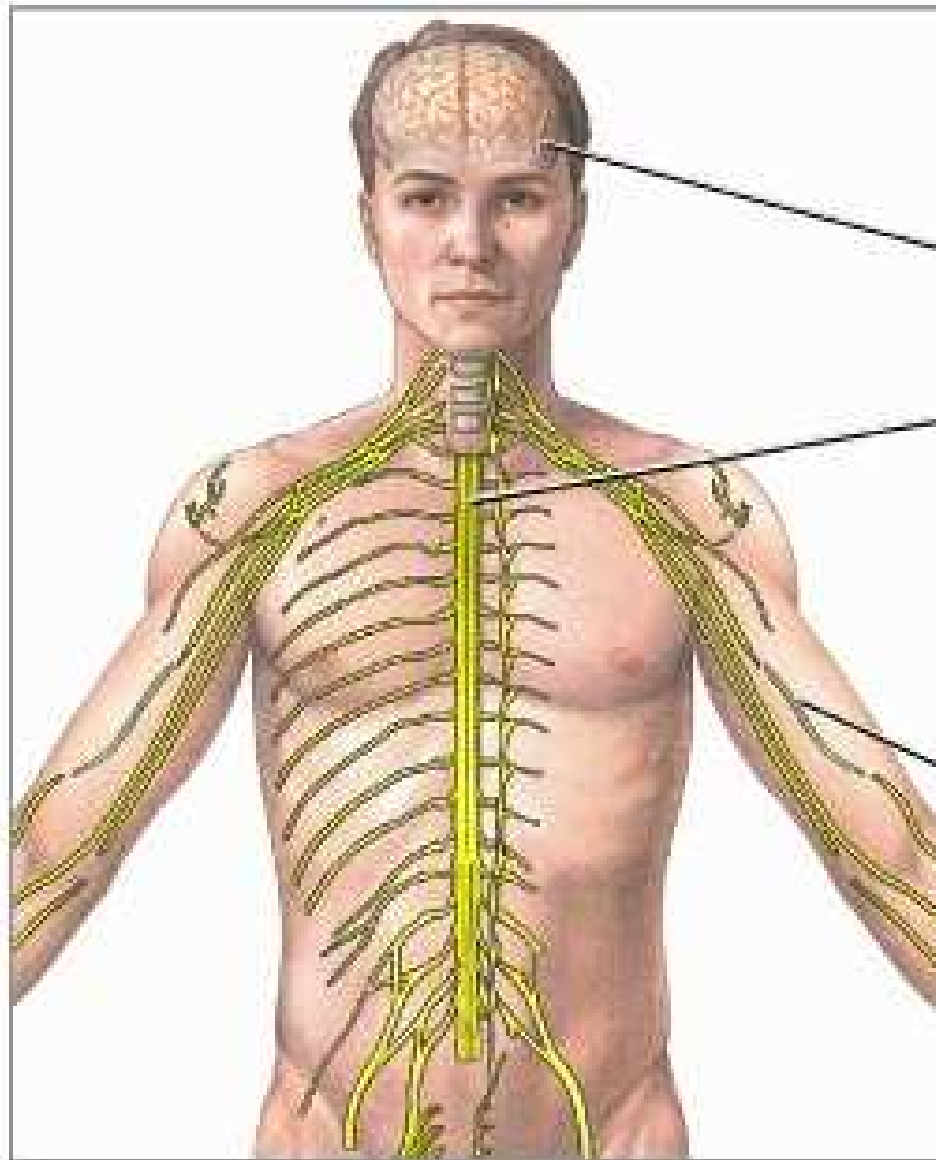


The Nervous System

EQ: What are the components of the nervous system and how do they work?

The Nervous System

- 1. Two main divisions
 - a. Central Nervous System (CNS) – consists of brain and spinal cord
 - b. Peripheral Nervous System (PNS) – includes nerves extending from brain and spinal cord
 - c. The CNS receives messages from the PNS, interprets them, and then sends out a response.



Central nervous system

Brain

Spinal cord

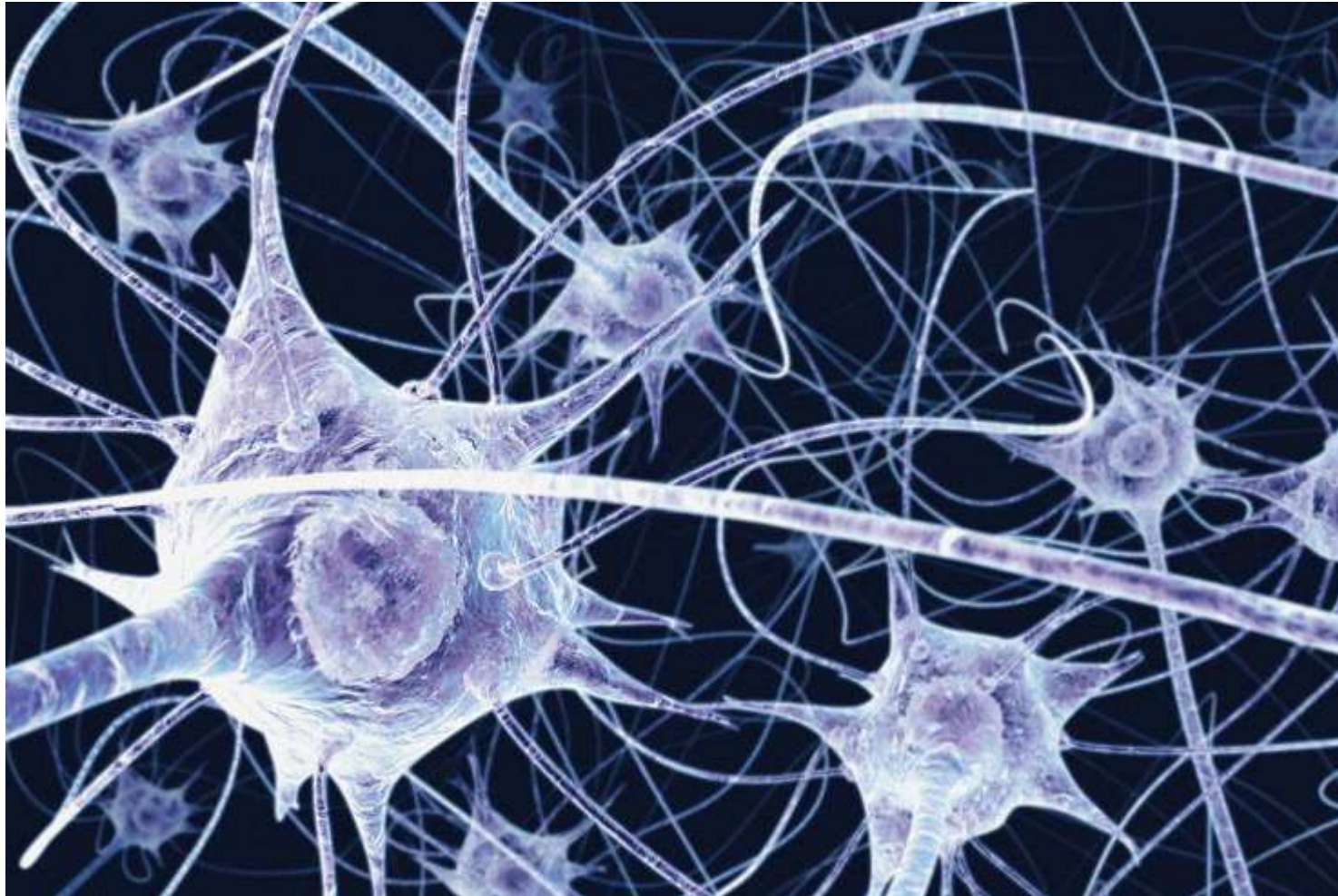
Peripheral nervous system

Peripheral nerve

Neurons

- 2. Neurons - nerve cells that transmit messages to and from the spinal cord and brain
 - a. Sensory Neurons – carry messages FROM body TO CNS
 - b. Motor Neurons – carry message TO body FROM CNS
 - c. Interneurons – connect neurons

What does a real neuron look like?



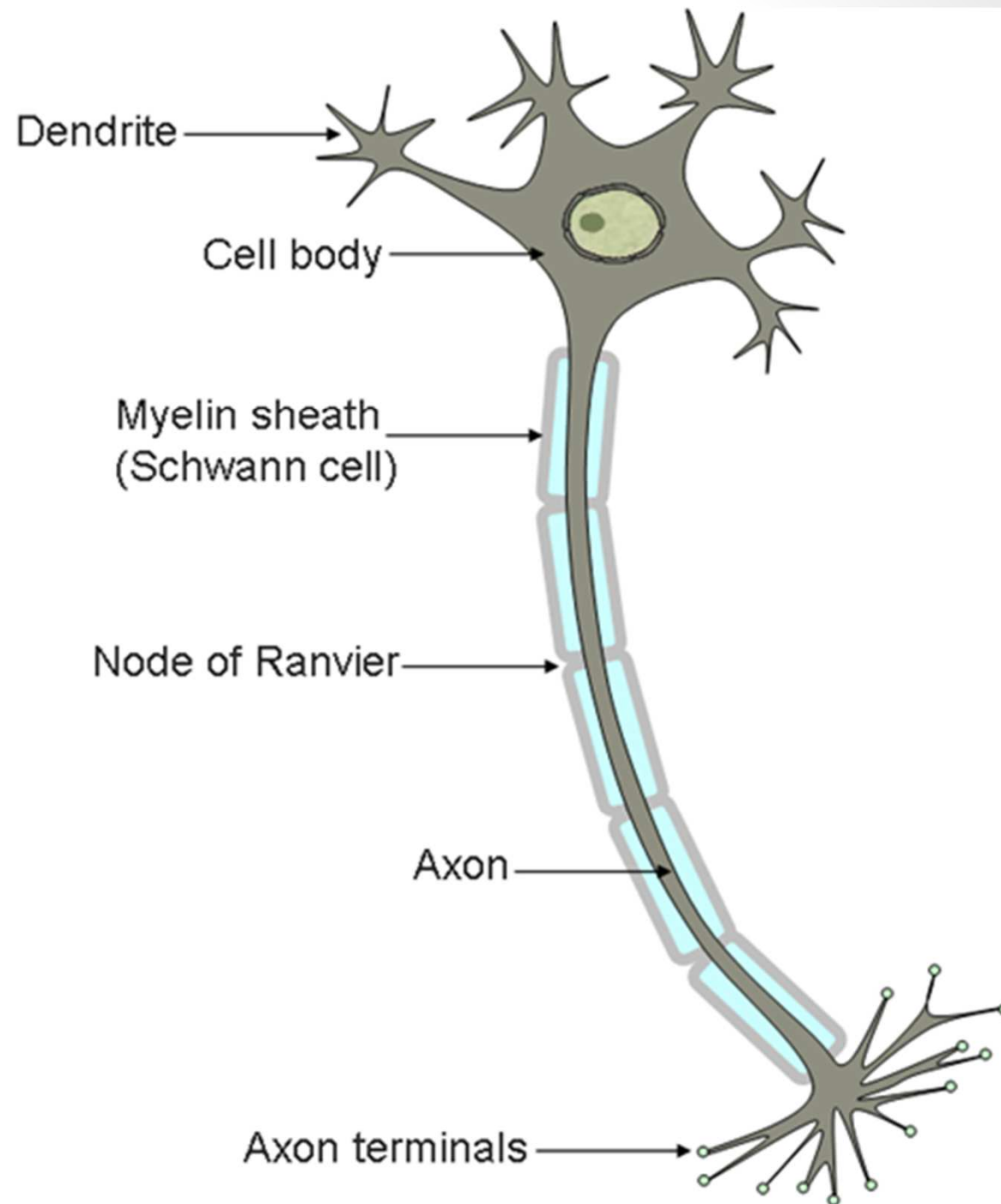
3. Structure and Functions of Neurons

- 1. Dendrites – receive information and transmit impulses toward cell body
- 2. Cell Body – large area which contains cell nucleus or power plant
- 3. Nucleus – command center of the neuron

3. Structure and Functions of Neurons

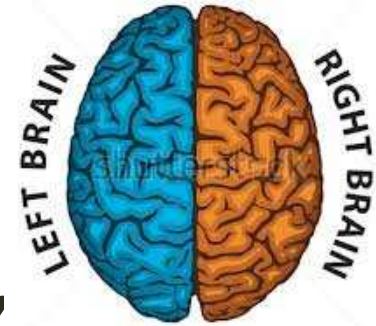
- 4. Axon – transmit impulses away from cell body and toward axon terminal
- 5. Axon Terminals – branched structures at the ends of neurons.
- 6. Myelin Sheath – insulating coat which covers the axon. This helps messages relay faster.

Neuron

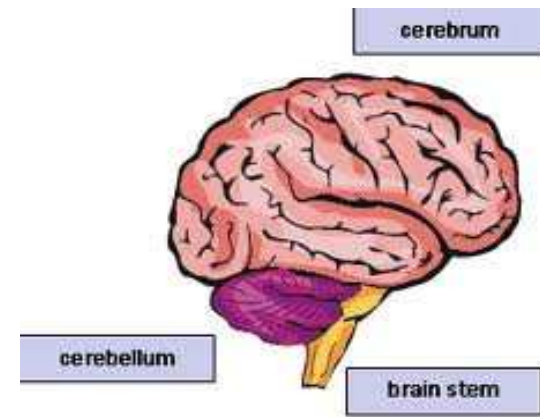


The Central Nervous System

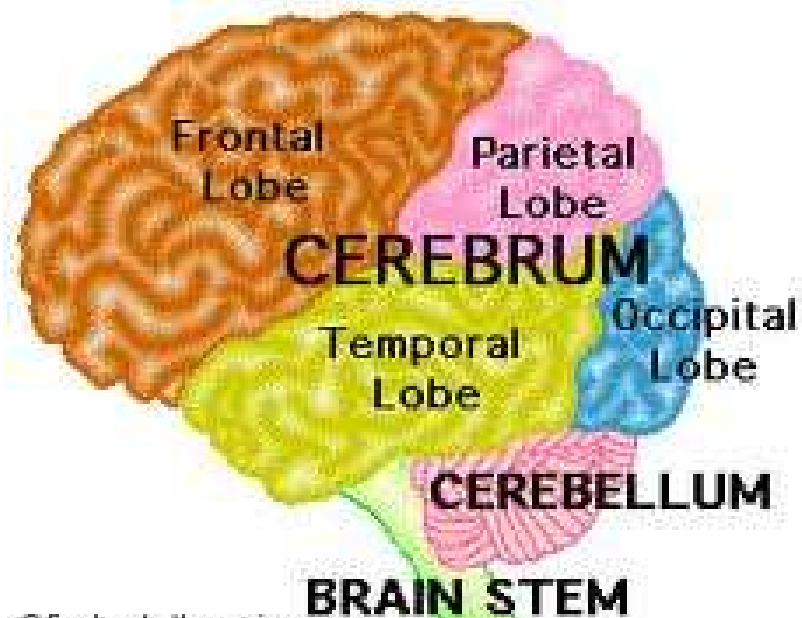
- 1. The brain
 - a. Helps you think, remember, reason, feel emotion, and coordinate muscle movement
 - b. Divided into **three** main parts: cerebrum, cerebellum, brain stem



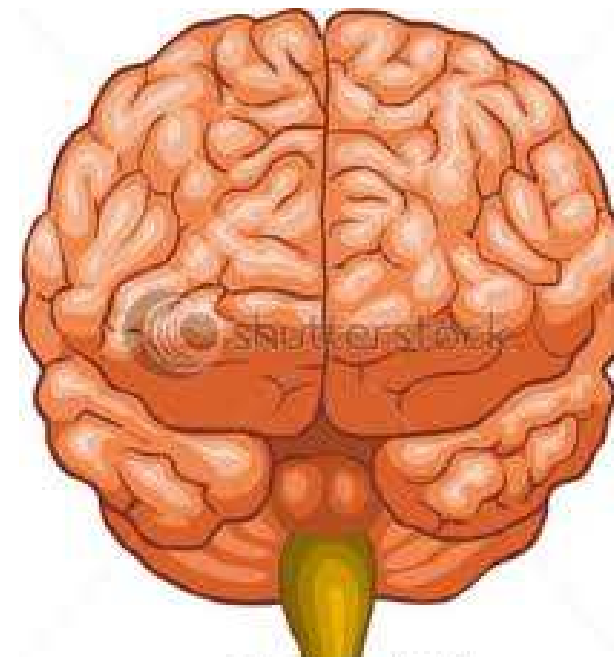
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The Brain



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The Central Nervous System

- 2. The Cerebrum
 - a. largest, most complex part of brain
 - b. right and left sides communicate with each other to coordinate movement. Right controls left side and vice versa.
 - c. left hemisphere is for more concrete thinking
 - d. right hemisphere is for abstract thinking

The Central Nervous System

- 3. Four lobes (parts) of the cerebrum
 - a. Frontal Lobe –use of language
 - b. Parietal Lobe – sensory information, including feelings of heat, cold, pain, touch
 - c. Occipital Lobe – Controls sense of sight
 - d. Temporal – sense of hearing and smell

- Stare at the red dot on the girl's nose for 30 seconds. Then look at the ceiling (or any white surface) and blink really quickly a few times. You will be amazed to see colorful girl



Left Side Activity

- Draw and label a brain and an neuron