Lab 13 Nervous system

Name _____ Seat number ____

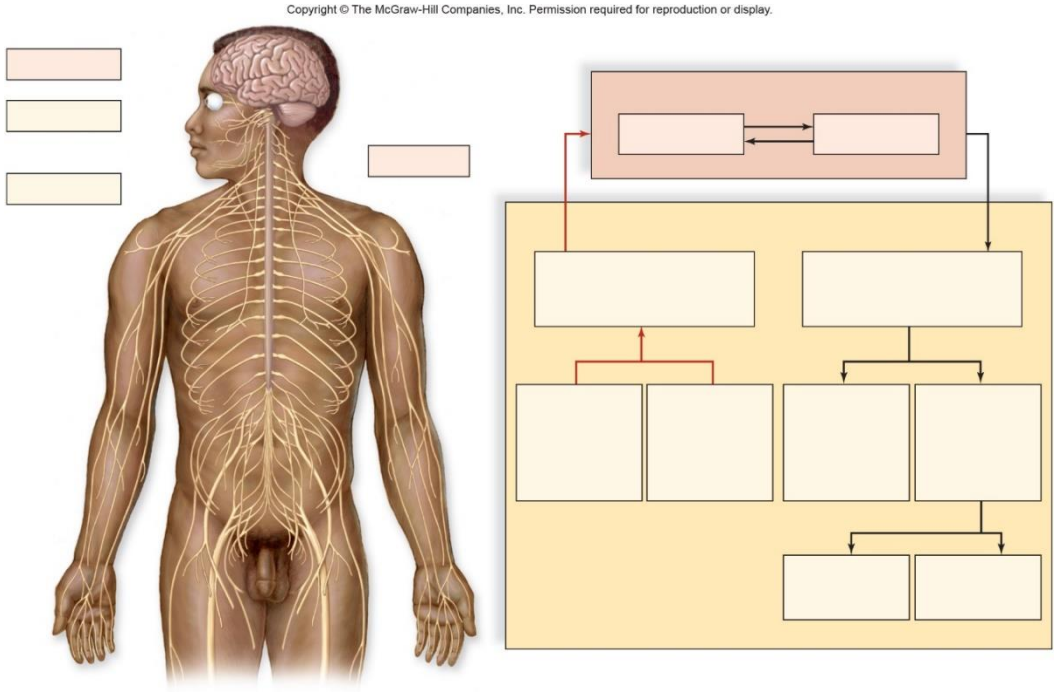
Objectives:

A. CNS (Central Nervous system) vs. PNS (Peripheral Nervous System) chart
B. Neuron anatomy
C. Draw a neuron
D. Some questions
E. Action potential voltage changes
F. Spinal cord anatomy
G. Longitudinal section of the brain
H. Left side of the brain

A. CNS vs. PNS chart

Use your textbook to help you fill in the chart below using the words below

brain	spinal nerves	spinal cord	cranial nerves
CNS	PNS	sensory nerves	motor nerves
somatic sensory nerves		somatic motor nerves	
sympathetic nervous system		visceral sensory nerves	
parasympathetic nervous system		autonomic motor nerves	

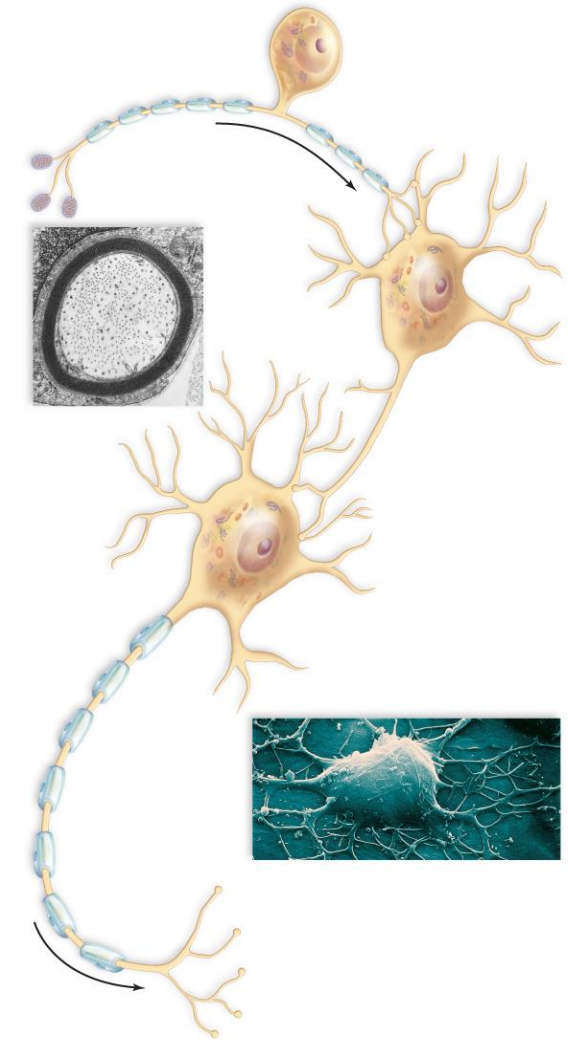


Lab 13 Nervous system

B. Neuron anatomy

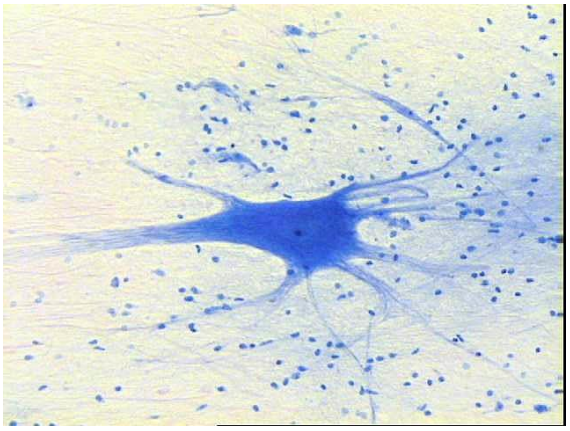
Using your textbook; Draw arrows to the parts of the neuron figure below and use the words provided to label the appropriate parts. Some terms will be used more than once. Be able to identify most of these same parts (numbers 5-10) on the neuron model.

1. sensory neuron	2. motor neuron	3. Interneuron
4. sensory receptor	5. cell body	6. Axon
7. dendrite	8. myelin sheath	9. node of Ranvier
10. axon terminal	11. Schwann cell	



C. Draw a neuron.

Label cell body, nucleus and processes (extensions off cell body) and neuroglia



_____ __×

D. Some Questions;

1) Which neuron sends signals to the brain? _____

2) Which neuron lies completely within the CNS? _____

3) Afferent neurons are also called _____

4) Which neuron would stimulate your muscles to allow you to walk? _____

5) The nucleus is found in which part of the neuron? _____

6) _____ are short extensions and they receive/conduct (circle one) nerve signals.

Lab 13 Nervous system

E. Action potential voltage changes

(Remember to write mV as units and positive or negative signs associated with the voltages)

(Ions have charges; please include them)

1. What is the voltage of a typical nerve cell at rest? _____

2. At rest, the inside of the cell is more negative/positive (circle one) and the outside of the cell is more negative/positive (circle one).

3. Give an example of a stimulus that would start the action potential.

4. What is the voltage when the stimulus hits threshold? _____

5. When an action potential changes the voltage of the cell to a more positive number, this is called depolarization | repolarization (*CIRCLE ONE*).

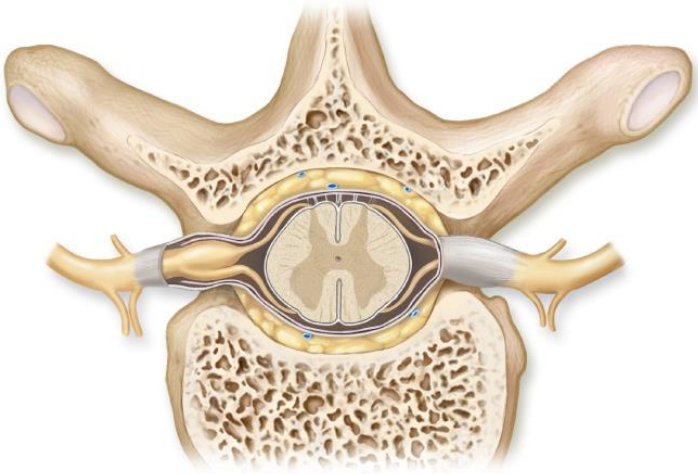
6. When an action potential changes the voltage of the cell back to the cell's resting potential, it is called depolarization | repolarization (*CIRCLE ONE*).

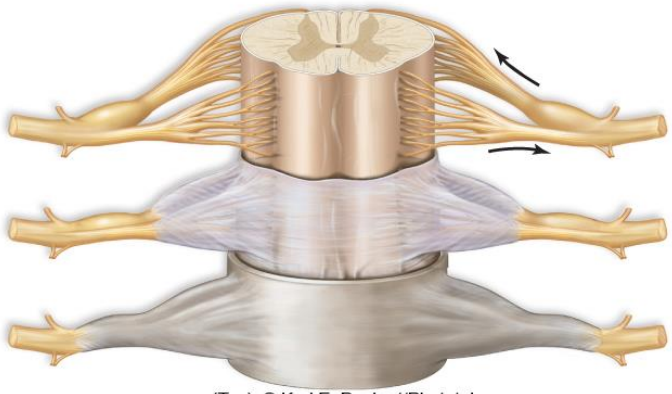
7. The action potential's change of voltage is caused by _____ moving into the cell and _____ moving out of the cell.

F. Spinal Cord Anatomy

Using your textbook; Draw arrows to the parts of the spinal cord figure below and use the words provided to label the appropriate parts. Some terms will be used more than once.

1. white matter
2. gray matter
3. central canal
4. spinal cord
5. dorsal root
6. ventral root
7. dorsal root ganglion
8. meninges
9. spinal nerve
10. vertebra

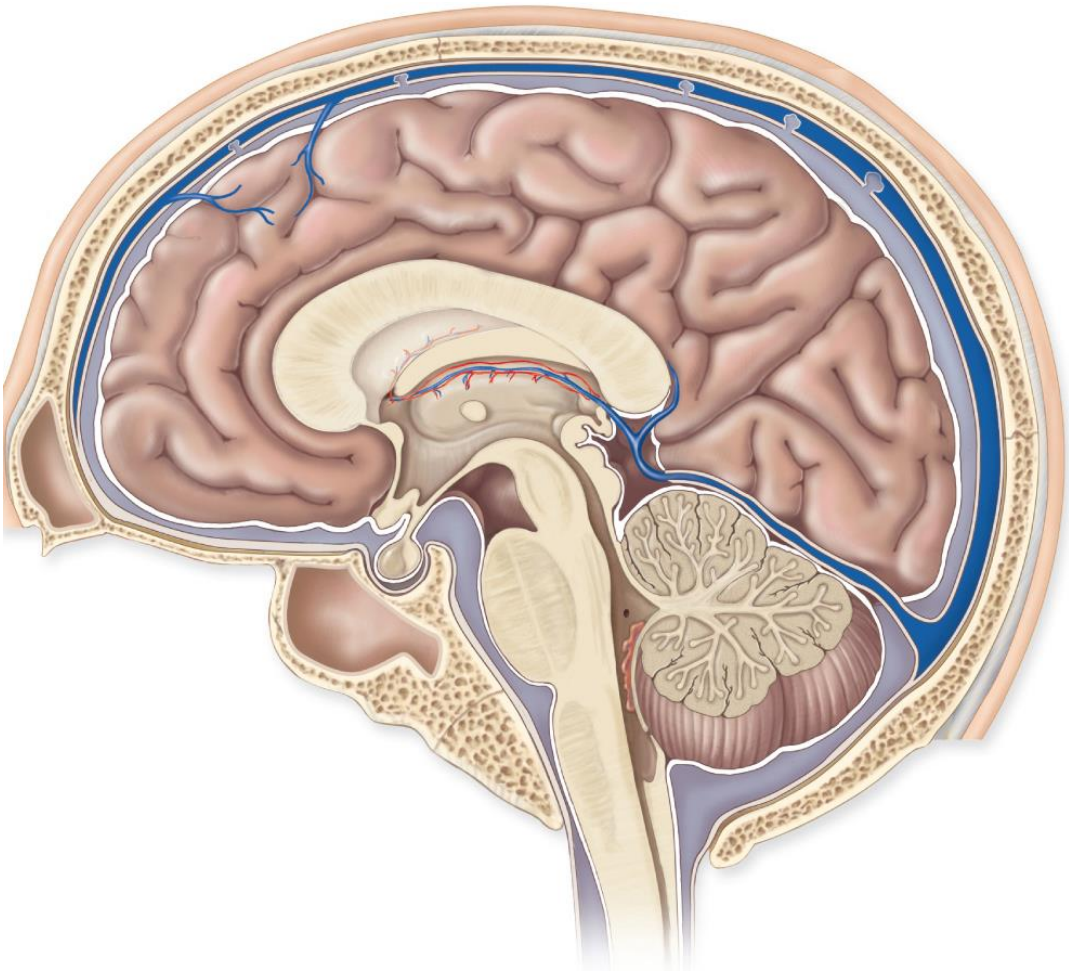




G. Longitudinal section of the brain

Using your textbook; Draw arrows to the parts of the brain figure below and use the words provided to label the appropriate parts. You will need to be able to identify these same structures on the brain models also.

1. cerebrum	2. cerebellum	3. meninges
4. skull	5. corpus callosum	6. thalamus
7. pituitary gland	8. hypothalamus	9. medulla oblongata
10. pons	11. spinal cord	



H. Left Side of the Brain

Using your textbook; Draw arrows to the parts of the brain figure below and use the words provided to label the appropriate parts. You will need to be able to identify these same structures on the brain models also.

1. temporal lobe	2. occipital lobe	3. parietal lobe	4. frontal lobe
5. anterior (ventral)	6. posterior (dorsal)	7. central sulcus	8. primary motor area
9. motor speech (Broca's) area	10. primary sensory (somatosensory) area	11. primary visual area	12. primary auditory area
13. sensory speech (Wernicke's) area