**Name:_____** **Hour:_____**

# Nervous System Review

## A. Main function of the Nervous System

Describe the 3 major functions of the nervous system.

What is the difference between sensory and motor neurons?

What type of neurons would you also call afferent? What about efferent?

Afferent neurons bring information from the _____ to the _____. Efferent neurons bring information from the _____ to the _____.

## B. Divisions of the Nervous System

What is the CNS made out of? What is the PNS made out of?

What do the following divisions of the nervous system control?

- Central Nervous System:
- Peripheral Nervous System:
- Somatic Nervous System:
- Autonomic Nervous System:
- Sympathetic:
- Parasympathetic:

## C. Structure and Function of a Neuron

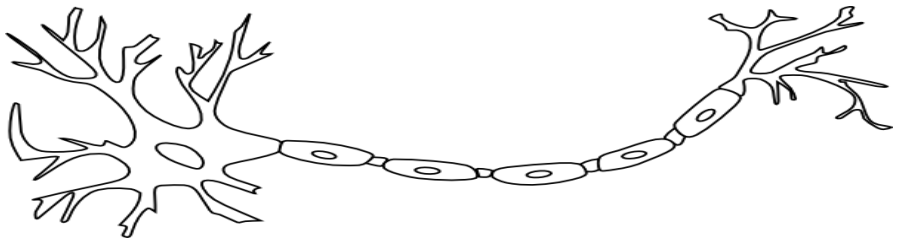
Describe the following parts of a neuron:

- Dendrites:
- Cell Body:
- Nucleus:
- Axon Hillock:
- Myelin Sheath:
- Axon:

- Nodes of Ranvier:
- Axon Terminal:
- Synapse:

Label the following parts of a neuron:

- Dendrites, cell body, nucleus, axon hillock, myelin sheath, axon, nodes of ranvier, axon terminal, synapse



**D. Functions of Glial Cells**

What are glial cells?

What is the purpose of the following glial cells?

- Astrocytes:
- Microglial cells:
- Ependymal cells:
- Oligodendrocytes:
- Schwann cells:
- Satellite cells:

What is the difference between oligodendrocytes and schwann cells?

**E. Action Potentials**

Describe the 5 steps in an action potential, in each step be sure to note what the overall charge is in the axon and outside, where the potassium and sodium area, and what channels may have opened.

When is the only time that a neuron is “ready” for an action potential (or another one) to occur?

**F. Structure and Function of a Synapse and Neurotransmitters**

After an action potential an _____ impulse signal turns into a _____ message and will convert back to an _____ impulse signal in the next neuron.

What/where is the synaptic cleft?

What are neurotransmitters?

How do neurotransmitters get to the synaptic cleft?

After neurotransmitters have crossed the synapse, what happens to them?

What do the following neurotransmitters do?

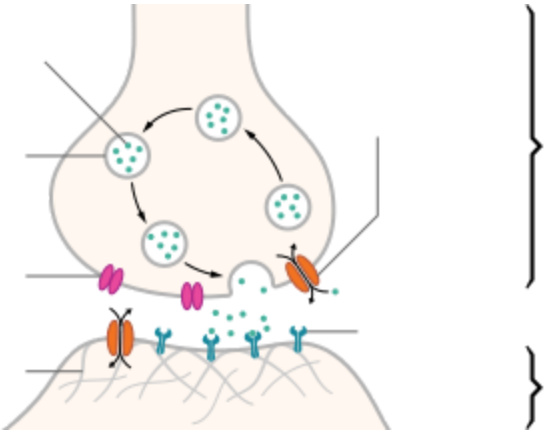
- Acetylcholine:
- Epinephrine:
- Norepinephrine:
- Cholintense:
- Serotonin:
- Dopamine:

In the following scenarios, which neurotransmitter(s) (from the list above) would you expect to be in the synapse?

- You are giving a speech in class and you are very nervous:
- You are sleeping and your heart rate has decreased:
- You are at a championship game and you are playing hard:

Label the following parts of a synapse:

- Terminal knob, neurotransmitter vesicles, neurotransmitters, synaptic cleft, postsynaptic membrane, receptors



**G. Reflex Arc**

Describe the reflex arc, in doing so make sure to use the following terms and put them in the correct order:

- Effect, Stimulus, Afferent Sensory Neuron, Efferent Motor Neuron, Interneuron, Brain, Spinal Cord

**H. Short Answer**

For the REVIEW, please write a response to ALL THREE choices below. On the test you'll only need to respond to 2 of the 3.

A. Describe the five major steps in an action potential AND include what the signal turns into in order to cross the synapse.
B. Describe the parts of a synapse AND describe a situation in which norepinephrine would be released.
C. Describe the steps in the reflex arc AND describe an example of when it might save your life.