NAME _____

LAB TIME/DATE _____

REVIEW SHEET 17

EXERCISE

Histology of Nervous Tissue

1. The basic functional unit of the nervous system is the neuron. What is the major function of this cell type?

_____

2. Name four types of neuroglia in the CNS, and list a function for each of these cells. (You will need to consult your textbook for this.)

Types	Functions
a. _____	a. _____
b. _____	b. _____
c. _____	c. _____
d. _____	d. _____

Name the PNS glial cell that forms myelin. _____

Name the PNS glial cell that surrounds dorsal root ganglion neurons. _____

3. Match each statement with a response chosen from the key.

Key:
a. afferent neuron
b. central nervous system
c. efferent neuron
d. ganglion
e. interneuron
f. neuroglia
g. neurotransmitters
h. nerve
i. nuclei
j. peripheral nervous system
k. synapse
l. tract

_____ 1. the brain and spinal cord collectively

_____ 2. specialized supporting cells in the CNS

_____ 3. junction or point of close contact between neurons

_____ 4. a bundle of nerve processes inside the CNS

_____ 5. neuron serving as part of the conduction pathway between sensory and motor neurons

_____ 6. ganglia and spinal and cranial nerves

_____ 7. collection of nerve cell bodies found outside the CNS

_____ 8. neuron that conducts impulses away from the CNS to muscles and glands

_____ 9. neuron that conducts impulses toward the CNS from the body periphery

_____ 10. chemicals released by neurons that stimulate or inhibit other neurons or effectors

Neuron Anatomy

4. Match the following anatomical terms (column B) with the appropriate description or function (column A).

Column A	Column B
_____ 1. region of the cell body from which the axon originates	a. axon
_____ 2. secretes neurotransmitters	b. axon terminal
_____ 3. receptive region of a neuron	c. axon hillock
_____ 4. insulates the nerve fibers	d. dendrite
_____ 5. site of the nucleus and most important metabolic area	e. myelin sheath
_____ 6. may be involved in the transport of substances within the neuron	f. neurofibril
_____ 7. essentially rough endoplasmic reticulum, important metabolically	g. neuronal cell body
_____ 8. impulse generator and transmitter	h. Nissl bodies

5. Draw a "typical" multipolar neuron in the space below. Include and label the following structures on your diagram: cell body, nucleus, nucleolus, Nissl bodies, dendrites, axon, axon collateral branch, myelin sheath, nodes of Ranvier, axon terminals, and neurofibrils.

6. What substance is found in synaptic vesicles of the axon terminal? _____

What role does this substance play in neurotransmission? _____

_____

_____

7. What anatomical characteristic determines whether a particular neuron is classified as unipolar, bipolar, or multipolar?

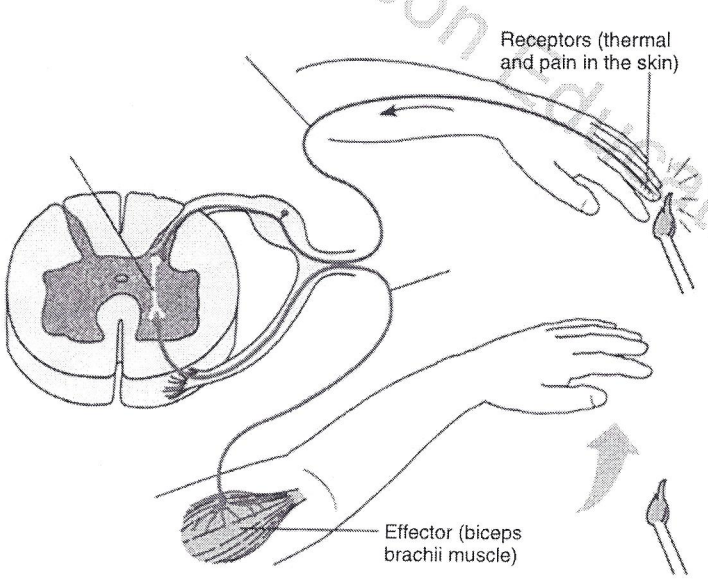
Make a simple line drawing of each type here.

Unipolar neuron **Bipolar neuron** **Multipolar neuron**

8. Correctly identify the sensory (afferent) neuron, interneuron (association neuron), and motor (efferent) neuron in the figure below.

Which of these neuron types is/are unipolar? _____

Which is/are most likely multipolar? _____



9. Describe how the Schwann cells form the myelin sheath and the neurilemma encasing the nerve processes.

Structure of a Nerve

10. What is a nerve? _____

11. State the location of each of the following connective tissue coverings.

endoneurium: _____

perineurium: _____

epineurium: _____

12. What is the function of the connective tissue wrappings found in a nerve? _____

_____

13. Define *mixed nerve.* _____

_____

14. Identify all indicated parts of the nerve section.