

## Chp 9 Study Guide & Test Review 2012/13

1. Identify & describe the difference between the CNS & PNS.
2. List the 3 general functions of the nervous system & explain how they interact.
3. Distinguish between *efferent* & *afferent* receptors
4. Define & draw a *neuron*, labels its parts & explain its function . Which way do impulses flow?
5. What are *glial/neuroglial cells*? Give their overall function. Name each type & its major function.
6. What is *myelin*? Distinguish between *myelinated* & *unmyelinated* axons. Explain how it relates to *white & gray matter of the brain*.
7. Summarize the structural classification of neurons(pg 211). Do the same with the functional classification (pg 212).
8. How does a membrane become polarized? Explain how the ions are distributed at rest.
9. Explain the steps involved in **generating an action potential** (pg 213 -15). Include: Calcium & Potassium ions & channels, resting potential, potential difference, threshold potential, polarized, depolarized, repolarized .
10. Distinguish between a *nerve impulse* & an *action potential*.
11. Explain the difference between the way nerve impulses are conducted on a myelinated vs unmyelinated axon (pg 216).
12. a) What is an *all-or-none response*? b) A *refractory period*? c) *summation*?
13. Explain how a nerve impulse is transmitted across a synapse using the following terms. *Pre- & post synaptic neuron, synaptic cleft, synaptic knobs, synaptic vesicles, calcium ions, & neurotransmitter*. Use a sketch to help your explanation.
14. How do excitatory & inhibitory actions of neurotransmitters differ?
15. Describe what a *neuronal pool* is.
16. Distinguish between *divergence* and *convergence* (you may opt to sketch them).
17. Distinguish between sensory, motor & mixed neurons.
18. Define *reflex* & explain how a *reflex arc* acts.
19. Name the layers of the meninges and explain their function. Which provide blood to the brain? between which 2 layers is cerebrospinal fluid found?

20. How many segments are there to the spinal cord? Where does it begin & end? What are its 2 main functions? Distinguish between ascending & descending tracts.

### **Sec. 9.13**

1. a) How many neurons are in the brain? a) What are the 3 major portions?
2. Define/what is: *cerebral hemispheres, corpus callosum, convolution/gyrus, sulcus, fissure*.
3. Describe the location & function (including centers) of each lobe of the cerebrum.
4. What is *hemisphere dominance*? b) What are the major functions of the dominant hemisphere? the nondom. one? c) How would you characterize people who have a more dominant right side? left side? d) which side of the body does the left hemisphere control? the right?
5. Know the ventricles' location & function b) what is found in them?  
c) Describe the function of the *choroid plexuses*. d) Explain the circulation of the *cerebrospinal fluid*; what is/are its function(s)?
6. What are the 2 main parts of the *diencephalon* (check your notes)? b) What do they control/what are their main functions?
7. Where is the limbic system found? b) What does it control?

What is the Brainstem?

8. Name the 3 parts of the midbrain. b) Describe the general function(s) of each.
9. What is the function of the reticular formation?
10. Describe the appearance & location of the cerebellum.

### **Sec. 9.14**

11. Define the *Peripheral Nervous System* (what are the 2 divisions?). Explain what each controls.
12. *We will not cover the spinal nerves BUT know what they are (in general) Define: dorsal root, ventral root & plexuses*

### **Sec. 9.15**

13. What is included in the Autonomic Nervous System? b) What are its general characteristics?
14. Compare & contrast the Sympathetic & Parasympathetic Divisions.
15. How are autonomic activities controlled?