

Study Guide

Chapter 12 / Nervous Tissue

1. What are the two major anatomical subdivisions of the nervous system (Fig 12.1)?
2. How is the peripheral nervous system “functionally” divided (Fig 12.2)?
3. What are the three general classes of neurons and what are the terms associated with these neurons that imply “direction” (Fig 12.3)?
4. Draw a representative neuron and explain the functions associated with the individual parts (Fig 12.4):
5. Why is it significant that a mature neuron does not have centrioles?
6. What is the function of the seven different neuroglia cells and indicate if they can be found either in the CNS or PNS (Fig 12.6)?
7. What is myelin and why is it important to the nervous system?
8. What are ion-regulated gates and ligand-regulated gates?
9. What is an action potential (Fig 12.13)? What “stuff” accounts for the “balance of charges” associated with this event? Can you use this model to explain how some neurotransmitters inhibit or stimulate the target tissue?
10. What is a synapse? What are presynaptic neurons and postsynaptic neurons? Define the functional parts of a synapse (Fig 12.20 & 12.22):
11. What are the “four major categories” of neurotransmitters? What is a neuromodulator?
12. Explain how cholinergic synapses, GABA-ergic synapses, and adrenergic synapses work and how one may excite while another may inhibit a postsynaptic neuron.
13. What happens to the resting membrane potential during an excitatory postsynaptic potential and an inhibitory postsynaptic potential (Fig 12.24)?

Please Note:

We will cover some of the material from Chapter 13 and Chapter 14 in lecture. I will post brief study guides covering the material you need to know for the exam. In addition, please read Chapters 15 and Chapter 16. There **will not be** a Study Guides for these two chapters. However, I would like you to do the end of chapter questions (Testing Your Recall / True and False / Testing Your Comprehension).

Our last unit exam's format will consist of multiple choice questions for Chapters 12-14 and an open book exam for Chapters 15 and 16. If you know why the answers are correct and understand the "physiology" associated with the questions to the End of Chapter Questions then you can be confident that you are prepared to take the unit exam's open book section.