

CHAPTER 13: Peripheral Nervous System

BI 235 – Review Questions

- 1) What are the three layers that are found wrapping a nerve? Where is each found?
- 2) Explain the process of nerve regeneration.
- 3) What is meant by receptor specificity? Spatial sensitivity?
- 4) What is meant by receptor adaptation? Compare and contrast tonic vs. phasic receptors?
- 5) What are the major ways that sensory receptors can be classified? How would you classify the retina in terms of stimulus type, location, and structural complexity?
- 6) What are the major unencapsulated simple receptors? What specifically does each type respond to? What are the major encapsulated simple receptors? What does each type respond to?
- 7) List the three cell types found in the nasal epithelium and briefly describe the function of each.
- 8) Sketch out a taste bud, including all the cell types present. Which papillae are taste buds located on? What are the main taste sensations?
- 9) What are the three major layers of the eye? What structures are associated with each layer? What is the function(s) of each structure?
- 10) Compare and contrast rods and cones.
- 11) List the fluids found in the two main chambers of the eye. What is the function of each?
- 12) Define refraction. What part of the eye is involved in light refraction? What is meant by accommodation?
- 13) What happens to the shape of the lens when the ciliary body contracts? Relaxes?
- 14) Define emmetropia, myopia, and hyperopia. How do you correct for the latter two?
- 15) Describe the process by which photons trigger a response in rods. What exactly is the physiological response triggered by light striking the rod?
- 16) What are the three major regions of the ear? What structures are associated with each region?
- 17) Describe how the semicircular canals are able to detect rotational movement of the body.
- 18) Describe how the vestibule is able to detect gravity sensation and linear acceleration of the body.
- 19) Draw out and label the major parts of a reflex arc. How do monosynaptic and polysynaptic reflex arcs differ? Can you give an example of each?

Applying Your Knowledge:

- 20) You are at a park watching some deer 35 feet away from you. A friend taps you on the shoulder to ask you a question. As you turn to look at your friend, who is standing 2 feet away, what changes would your eyes undergo?
- 21) A chef has been diagnosed with leukemia. He is about to undergo chemotherapy, which will kill rapidly dividing cells in his body. He needs to continue working between bouts of chemotherapy. What consequences of chemotherapy would you predict that might affect his job as a chef?
- 22) For a few seconds after you ride the express elevator from the 20th floor to the ground floor, you still feel as if you are descending, even though you have come to a stop. Why?