Sensory Physiology
Chapter 10

1. What is the function of a receptor?
2. Define the following features about receptors:
    a. Transduction
    b. Modality
    c. Generator potential
3. What is a receptive field? What is the significance of the size of a receptive field?
4. What is the function of a receptor?
5. Describe the function of the following receptors:
    a. Nociceptor
    b. Thermoreceptor
    c. Mechanoreceptor
    d. Chemoreceptor
    e. Photoreceptor
    f. Proprioceptor
6. What is the difference between a general sense receptor (cutaneous) and a special sense receptor?
7. Describe the following types of receptors: Tonic, phasic
8. How does the frequency of the action potential relate to the intensity of the stimuli?
9. What structures are found in the inner ear?
10. What is the function of the following structures:
    a. semicircular ducts
    b. vestibule
    c. cochlea
    d. round window
    e. oval window
    f. auditory tube
    g. tempanic membrane
11. Where are the receptors for hearing located?
12. Where are the receptors for head movement located (linear acceleration)
13. Where are the receptors for angular acceleration located?
14. How are the receptors in the ear similar, how are they different?
15. How does the middle ear protect your ear from loud sounds?
16. Describe the anatomy of the ampullae, utricle, saccule, and cochlea (scala vestibuli, sochlear duct, scala tympani, organ of corti). What fluids are found in each?
17. Describe the hearing pathway. Begin with sound waves entering the auditory canal and end at the cochlear nerve.
    a. How is pitch determined
    b. How is volume determined
18. What is tonotopic, how is this related to tone?

19. Describe the following:
    a. Pigmented layer
    b. Neural layer
    c. Photoreceptors (cones and rods)
    d. Bipolar neurons
    e. Ganglion cells
    f. fovea centralis
20. What is the optic nerve?
21. Why is the optic disc considered the blind spot?
22. What is accommodation? How are the ciliary bodies, muscle related to this?
23. How does the shape of the lens affect light refraction?
24. Describe the following: Myopia, hyperopia, emmetropia.
25. What is rodopsin?
26. What happens to rhodopsin in the presence or absence of light?
27. Define “dark current”
28. Describe in detail (include ions, channels, neurotransmitters released, etc) how a photoreceptor responds to the presence or absence of light.
29. Why do cones have a higher visual acuity compared to rods?