Lab 8: Nervous System & Senses

I. The Mammalian Brain

GOALS:
You should be able to....
- ★ **Identify and state the functions of the parts of the brain (listed below)using preserved sheep brain specimens and the plastic human brain model.**
- ★ **List two observable differences in the structures of human and sheep brains.**

Preserved Sheep Brain & Human Brain Model

pp. 216-218: Use procedure and diagrams to locate and learn the functions of the following:

- ✓ cerebrum
- ✓ right & left cerebral hemispheres
- ✓ corpus callosum
- ✓ frontal lobe
- ✓ parietal lobe
- ✓ occipital lobe
- ✓ temporal lobe
- ✓ cerebellum
- ✓ thalamus
- ✓ hypothalamus
- ✓ diencephalon
- ✓ midbrain
- ✓ pons
- ✓ medulla oblongata
- ✓ pituitary gland (add this to the diagrams in your manual)

II. Spinal Nerves and Spinal Cord

GOALS:
You should be able to....
- ★ **Describe the anatomy of the spinal cord.**
- ★ **Explain how the spinal cord functions in relation to the brain and spinal nerves.**
- ★ **Describe the path of a spinal reflex arc.**

Spinal Cord Model

- ❑ pp. 219-top of 220 (Skip "Observation"):
  Use model, reading, and diagram to locate and learn the functions of:
  - ✓ sensory neurons
  - ✓ interneurons
  - ✓ motor neurons
  - ✓ gray matter
  - ✓ white matter

List the following steps of a reflex arc in order:
sensory neuron, effector, sensory receptor, motor neuron, stimulus, interneuron, response

Spinal Reflexes

- ❑ p. 220- top of 221: Read info and follow procedure using reflex hammers.

III. The Eye

GOALS:
You should be able to....
- ★ **Identify and state the functions of the parts of the eye (listed below) using preserved sheep eye and plastic model of human eye.**
- ★ **Explain what causes the "blind spot" in your vision.**
- ★ **Describe what occurs when your eye accommodates for different distances.**

Key Terms:
- ✓ rod cells
- ✓ cone cells
- ✓ accommodation
- ✓ refraction
- ✓ blind spot

Preserved Sheep Eye & Human Eye Model

- ❑ pp. 221-222: Use procedure, reading, and diagram to locate & learn functions of:
  - ✓ sclera
  - ✓ cornea
  - ✓ retina
  - ✓ lens
  - ✓ ciliary body
  - ✓ iris
  - ✓ pupil
  - ✓ aqueous humor
  - ✓ vitreous humor

- ✓ optic nerve
- ✓ choroid

❑ After observing the demonstration, dissect a sheep eye to locate the above structures.

Finding your blind spot & testing accommodation

❑ pp. 223-224: Follow procedures and answer questions.

IV. The Ear

GOALS:
You should be able to....
★ **Identify and state the functions of the parts of the ear using plastic model of human ear.**
★ **Describe how humans perceive the direction of sound.**

❑ pp. 225: Use the reading, diagram, and model to locate and learn the functions of:

Outer Ear
- ✓ pinna
- ✓ auditory canal

Middle Ear
- ✓ tympanic membrane
- ✓ malleus (hammer)
- ✓ incus (anvil)
- ✓ stapes (stirrups)
- ✓ auditory tube
- ✓ oval window

Inner Ear
- ✓ cochlea
- ✓ hair cells
- ✓ cochlear (auditory) nerve
- ✓ semicircular canals

❑ p. 226: Follow "Experimental Procedure: Locating Sound"

❑ NOTE: You should read the more thorough explanation of how the ear works on pp. 613-615 in your text

V. Sensory Receptors in the Skin

GOALS:
You should be able to....
★ **Explain the relationship between the amount of touch receptors and the ability to distinguish two different touch points.**
★ **Describe the different sensations felt during the temperature receptors experiment.**

❑ p. 227: Follow experimental procedures and answer questions.

VI. Review

❑ p. 230: Answer all questions EXCEPT #14, 16, 17.