

Lab 8: Nervous System

Introduction and brain pp. 231-234, p.247 questions 1-3

Spinal nerves and spinal cord pp. 235-237, p.247 questions 4-7

Human & sheep eye pp. 237-240, p.247 questions 8-10, 20

The human ear pp. 240-242, p.247 questions 11-13, 21

Sense of touch and sense of heat and cold p. 244 question 14

GOALS:

- Identify and state the functions of the parts of the brain (listed below) using preserved sheep brain specimens and the plastic human brain model.
- Describe the anatomy of the spinal cord.
- Describe the path of a spinal reflex arc.
- 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.
- 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.
- 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.

KEY TERMS:

brain

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

spinal chord

sensory neurons
interneurons
motor neurons
gray matter
white matter
effector
stimulus
response

Outer Ear

pinna
auditory canal

Middle Ear

tympenic membrane
malleus (hammer)
incus (anvil)
stapes (stirrups)
auditory tube
oval window

Inner Ear

cochlea
hair cells
cochlear (auditory) nerve
semicircular canals

eye

rod cells
sclera
cornea
retina
lens
cone cells
accommodation
refraction
blind spot
ciliary body
iris
pupil
aqueous humor
vitreous humor
optic nerve
choroid

I. The Mammalian Brain:

pp. 231-34: Read and follow directions. Look at whole sheep brain, half sheep brain and plastic model of the human brain. Be able to locate the different structures. THESE WILL BE ON THE PRACTICAL

II. Spinal Nerves and Spinal Cord:

pp. 235-237 (top only): Read and follow directions. Look at the model of the spinal chord and be able to locate the different structures. THIS WILL BE ON THE PRACTICAL

List the following steps of a reflex arc in order:

sensory neuron, effector, sensory receptor, motor neuron, stimulus, interneuron, response

III. The Eye:

pp. 238-240: Read and follow directions. Perform Look at the model of the eye and observe the sheep eye during the dissection. Be able to locate the different structures. THESE WILL BE ON THE PRACTICAL

IV. The Ear:

pp. 240-242 (stop at 18.5): Read and follow directions. Be able to locate structures on the model of the human ear. THIS WILL BE ON THE PRACTICAL

V. Sense of touch and sense of heat and cold:

p. 244: Read and follow directions.

VI. Review:

p. 247: Answer questions 1-14, 20-21