

BIOLOGY 11 – PRE-LAB EXERCISE

13-14

Name: **Answer Key**

5

Lab Day & Time:

Musculoskeletal System / Nervous System & Senses

- Examine **Figure 13.4** in the *Lab Manual*.
 - What do “anterior” and “posterior” mean? **anterior: front side; posterior: back side**
 - What are phalanges? **fingers & toes**
 - Locate the tibia, sternum, scapula, carpals, cranium, and coccyx. Which of these are part of the axial skeleton and which are part of the appendicular skeleton?
axial: sternum, cranium, and coccyx
appendicular: tibia, scapula, carpals
- What are “antagonistic pairs of muscles”? Give an example.
Two muscles that cause the same bone to move in opposite directions.
E.g., biceps brachii vs. triceps brachii
- Define and distinguish flexion and extension movements. Give an example of each.
Flexion: movement that decreases the joint angle. E.g., biceps brachii flexes the forearm in toward the upper arm.
Extension: movement that increases the joint angle. E.g., triceps brachii extends the forearm away from the upper arm.
- Define and distinguish adduction and abduction movements. Give an example of each.
Adduction: movement away from body midline. E.g., latissimus dorsi adducts the arm down toward body.
Abduction: movement toward body midline. E.g., deltoid adducts the arm up away from body.
- What **two** proteins generate the force of contraction in a muscle? **actin & myosin**

What molecule *directly* provides the energy for these proteins to generate this force? **ATP**
- What is the largest part of the human brain? **cerebrum**

What part of the brain contains the control centers for breathing and heart rate? **medulla oblongata**
- What is a reflex? **Involuntary, consistent response to a particular stimulus.**

What three types of neurons are used in a spinal reflex? **sensory neuron, interneuron, & motor neuron**
- What are the two types of photoreceptors in the eye? **rods & cones**

What part of the eye contains these photoreceptors? **retina**

What causes the normal blind spot in the human visual field? **hole in the retina where the optic nerve penetrates**

What is visual accommodation? **changing the shape of the lens so an object remains in focus at different distances**
- What aspect of the “Sense of Touch” are you measuring with the two-point discrimination test described in section **14.5** of your *Lab Manual*?
relative density (amount per area) of touch receptors in different areas of skin → sensory acuity: ability to detect details (i.e., resolve distinct points) in the stimulus