The Human Nervous System

Choose one answer per question. Circle A, B, C, or D.

1. Which two structures make up the central nervous system?
   A. Brain and spinal cord
   B. Brain and the nerves in an arm
   C. Spinal cord and the nerves in a leg
   D. Nerves in the arms and legs

2. The nerves that extend from the central nervous system into the hand belong to which division?
   A. Skeletal system
   B. Central nervous system
   C. Peripheral nervous system
   D. Circulatory system

3. Which part of a neuron contains its nucleus?
   A. Axon
   B. Cell body
   C. Dendrite
   D. Axon terminal

4. A typical neuron has several short branches extending from its cell body. Which label fits branches that receive messages from other neurons?
   A. Nuclei
   B. Axon terminals
   C. Cell bodies
   D. Dendrites

5. In a typical neuron, which part carries a message away from the cell body toward the terminals?
   A. Dendrite
   B. Axon
   C. Nucleus
   D. Cell body

6. A student hears a chime and points toward the speaker. Which event is the sensory input?

A. Receptors in the ear detect the sound.
B. Arm muscles lift the student's hand.
C. Finger muscles move into a pointing position.
D. Neurons send a command to the arm muscles.

7. A student decides to pick up a notebook. Which part of the body receives the motor messages that produce the lift?

A. Touch receptors in the notebook-holding hand
B. Light receptors in the eyes
C. Hearing receptors in the ear
D. Skeletal muscles in the arm and hand

8. In a simple model of a typical neuron, a message arrives at the dendrites and leaves through the terminals. Which sequence follows that path?

A. Terminals → axon → cell body → dendrites
B. Dendrites → axon → cell body → terminals
C. Dendrites → cell body → axon → terminals
D. Cell body → terminals → dendrites → axon

9. A classroom diagram marks the junction where one neuron communicates with another. Which label names the junction?

A. Synapse
B. Nucleus
C. Cell body
D. Dendrite

10. A spinal cord model shows a sensory neuron sending a message to a second neuron, which passes it to a motor neuron. What is the role of that middle neuron?

A. Sensory receptor
B. Sensory neuron
C. Motor neuron
D. Interneuron

11. Two animations show the same arm movement. In A, a stimulus triggers movement through a spinal circuit before any choice to move. In B, the person chooses to move. Which labels fit?

A. Both animations show a spinal reflex.
B. A is a voluntary movement, and B is a spinal reflex.
C. A is a spinal reflex, and B is a voluntary movement.
D. Both animations show a voluntary movement.

12. Arrow A goes from a fingertip touch receptor toward the spinal cord. Arrow B goes from the central nervous system toward a finger muscle. Which labels match?

A. A is motor output, and B is sensory input.
B. A is sensory input, and B is motor output.
C. Both arrows show sensory input.
D. Both arrows show motor output.

13. A drawing shows one neuron passing a message to a second. The second neuron receives that message on a dendrite. Which pair labels the two ends at the junction in the direction of the message?

A. First neuron's dendrite → second neuron's dendrite
B. First neuron's dendrite → second neuron's axon terminal
C. First neuron's cell body → second neuron's nucleus
D. First neuron's axon terminal → second neuron's dendrite

14. A fictional reflex animation shows a touch message reaching the spinal cord. The arrow from the motor neuron toward the muscle is missing, and the muscle icon stays still. What does the animation show?

A. The sensory message reaches the cord, but the modeled motor path is incomplete.
B. The sensory message misses the cord, but the modeled motor path is complete.
C. The modeled motor message reaches the muscle before the touch signal reaches the cord.
D. Every arrow from the receptor to the muscle is present.

15. A fictional classroom model logs a sensory marker at tick 2 and movement at tick 6 in run A. In run B, it logs those markers at ticks 3 and 10. Which comparison fits the log?

A. Run A's sensory-to-movement interval is 4 ticks shorter.
B. Run B's sensory-to-movement interval is 3 ticks shorter.
C. Run A's sensory-to-movement interval is 3 ticks shorter.
D. The sensory-to-movement intervals are equal.