

What Is the Human Nervous System?

Worksheet

The nervous system consists of the central nervous system (brain & spinal cord) and peripheral nervous system (nerves). It transmits electrical and chemical signals to coordinate movement, sensation, and automatic functions.

Questions

1. Which part of the nervous system controls digestion and heart rate?
 - A) Somatic
 - B) Autonomic
 - C) Sensory
 - D) Motor
2. What transmits signals across a synapse?
 - A) Ions
 - B) Neurotransmitters
 - C) Protein channels
 - D) Electrical current
3. In a reflex arc, which neuron connects the sensory and motor neurons?
 - A) Afferent
 - B) Efferent
 - C) Interneuron
 - D) Relay
4. Which division of the autonomic nervous system promotes 'fight or flight'?
 - A) Parasympathetic
 - B) Sympathetic
 - C) Central
 - D) Somatic
5. You touch a hot stove. Explain the reflex arc.
6. What is the difference between the somatic and autonomic nervous systems?
7. Name the three parts of a neuron and their roles.
8. Define: What are the two main divisions of the nervous system?
9. Define: What is a synapse?
10. Define: What is a reflex arc?

Answer Key

1. B) Autonomic - The autonomic nervous system automatically regulates organ functions like digestion and heart rate.
2. B) Neurotransmitters - Neurotransmitters are chemical messengers released from the axon terminal.
3. C) Interneuron - Interneurons in the spinal cord bridge sensory and motor neurons in reflex arcs.
4. B) Sympathetic - The sympathetic nervous system increases heart rate and prepares for danger.
5. Heat receptor detects temperature sensory neuron sends signal synapse relays to motor neuron muscle contracts hand withdraws (all within 50 ms, faster than conscious thought).
6. Somatic = voluntary control of skeletal muscles (movement). Autonomic = involuntary control of organ systems (heart rate, digestion, breathing) - divided into sympathetic ('fight/flight') and parasympathetic ('rest/digest').
7. Dendrite (receives signals), cell body (processes signals), axon (transmits signal to next neuron). Together they form the functional unit for nerve impulses.
8. Central (brain & spinal cord) and peripheral (all other nerves).
9. The gap between two neurons where neurotransmitters cross to transmit signals.
10. A rapid automatic response pathway that bypasses the brain (e.g., pulling hand from heat).

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