

Nervous System Quiz Answer Key PDF

Nervous System Quiz Answer Key PDF

Disclaimer: The nervous system quiz answer key pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

Which part of the nervous system includes the brain and spinal cord?

- A. Peripheral Nervous System
- B. Central Nervous System ✓**
- C. Autonomic Nervous System
- D. Somatic Nervous System

Which lobe of the brain is primarily responsible for visual processing?

- A. Frontal Lobe
- B. Parietal Lobe
- C. Temporal Lobe
- D. Occipital Lobe ✓**

What type of cells support and protect neurons?

- A. Erythrocytes
- B. Leukocytes
- C. Neuroglia ✓**
- D. Platelets

Which part of the brain controls basic life functions such as breathing and heart rate?

- A. Cerebellum
- B. Brainstem ✓**
- C. Cerebrum
- D. Hippocampus

What is the basic functional unit of the nervous system?

- A. Axon
- B. Neuron ✓**
- C. Dendrite
- D. Synapse

How does the structure of a neuron facilitate its function in the nervous system?

The unique structure of a neuron, with its dendrites for receiving signals, a long axon for transmitting impulses, and synaptic terminals for communication with other neurons, facilitates its function in the nervous system.

Discuss the differences between the sympathetic and parasympathetic nervous systems in terms of their effects on the body.

The sympathetic nervous system activates the body's stress response, increasing heart rate, dilating pupils, and inhibiting digestion, whereas the parasympathetic nervous system conserves energy by slowing the heart rate, constrictING pupils, and stimulating digestive processes.

What is neuroplasticity, and why is it important for learning and memory?

Neuroplasticity is the brain's capacity to change and adapt in response to experience, learning, and injury, making it essential for the processes of learning and memory.

Which of the following are parts of the Central Nervous System? (Select all that apply)

- A. Brain ✓**
- B. Spinal Cord ✓**
- C. Peripheral Nerves
- D. Cranical Nerves

What is the role of the spinal cord in the nervous system?

- A. Transmit information to and from the brain ✓**
- B. Control voluntary movements
- C. Produce hormones
- D. Store memories

Which of the following is NOT a function of the nervous system?

- A. Sensory input
- B. Integration of data
- C. Blood circulation ✓**
- D. Control of muscles and glands

Which of the following are symptoms of neurological disorders? (Select all that apply)

- A. Paralysis ✓**
- B. Numbness ✓**
- C. Increased appetite
- D. Cognitive impairment ✓**

Which brain structures are part of the limbic system? (Select all that apply)

- A. Hippocampus ✓**
- B. Amygdala ✓**
- C. Thalamus ✓**
- D. Cerebellum

Which structures are involved in the transmission of nerve impulses? (Select all that apply)

- A. Axon ✓**
- B. Dendrite ✓**
- C. Synapse ✓**
- D. Myelin Sheath ✓**

Which division of the autonomic nervous system is responsible for the 'fight or flight' response?

- A. Somatic Nervous System
- B. Sympathetic Nervous System ✓**
- C. Parasympathetic Nervous System
- D. Central Nervous System

Which of the following are functions of the autonomic nervous system? (Select all that apply)

- A. Regulating heart rate ✓
- B. Controlling voluntary muscle movements
- C. Managing digestive processes ✓
- D. Adjusting pupil size ✓

Explain the role of neurotransmitters in synaptic transmission.

Neurotransmitters are released from the presynaptic neuron into the synaptic cleft, where they bind to receptors on the postsynaptic neuron, leading to the propagation of electrical signals and influencing various physiological processes.

Which cells are types of neuroglia? (Select all that apply)

- A. Astrocytes ✓
- B. Oligodendrocytes ✓
- C. Schwann Cells ✓
- D. Erythrocytes

Identify and explain the protective structures of the brain and their significance.

The protective structures of the brain include the skull (the bony encasement), the meninges (three layers of membranes: dura mater, arachnoid mater, and pia mater), and cerebrospinal fluid (CSF) that cushions the brain and provides buoyancy.

Describe the process of an action potential and how it propagates along a neuron.

The process of an action potential begins with a stimulus that depolarizes the neuron's membrane, causing voltage-gated sodium channels to open and sodium ions to rush in, further depolarizing the membrane. Once a threshold is reached, an action potential is generated, characterized by a rapid rise and fall in voltage. After reaching its peak, potassium channels open, allowing potassium ions to exit the cell, repolarizing the membrane. This wave of depolarization and repolarization propagates along the axon, aided by the myelin sheath in myelinated neurons, which allows for faster transmission through saltatory conduction.