Fundamentals of Neuroscience

Neuroscience · Practice Test · 12 Questions

1. Which part of the neuron is primarily responsible for receiving incoming signals from other neurons?

A) Axon terminal
B) Dendrites
C) Myelin sheath
D) Soma

2. What is the gap between two neurons where neurotransmitters are released called?

A) Node of Ranvier
B) Synaptic cleft
C) Dendritic spine
D) Axon hillock

3. Which ion is most responsible for the depolarization phase of an action potential?

A) Sodium (Na+)
B) Potassium (K+)
C) Calcium (Ca2+)
D) Chloride (Cl-)

4. What is the function of the myelin sheath in the nervous system?

A) To produce neurotransmitters
B) To insulate axons and increase signal conduction speed
C) To process sensory information in the brain
D) To protect the blood-brain barrier

5. Which lobe of the cerebral cortex is primarily associated with visual processing?

A) Frontal lobe
B) Temporal lobe
C) Parietal lobe
D) Occipital lobe

6. What is the main function of the cerebellum?

A) Regulation of heart rate
B) Coordination of movement and balance
C) Processing of language
D) Formation of long-term memories

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7. Which neurotransmitter is most directly involved in the regulation of mood, sleep, and appetite?

A) Dopamine
B) Serotonin
C) Glutamate
D) GABA

8. The 'fight or flight' response is primarily mediated by which division of the nervous system?

A) Parasympathetic nervous system
B) Sympathetic nervous system
C) Somatic nervous system
D) Enteric nervous system

9. Where is the cell body (soma) of a neuron located?

A) In the axon terminal
B) Within the synaptic vesicle
C) Surrounding the nucleus
D) Inside the myelin sheath

10. Which brain structure acts as the primary relay station for sensory information traveling to the cerebral cortex?

A) Thalamus
B) Hypothalamus
C) Amygdala
D) Hippocampus

11. What occurs during the repolarization phase of an action potential?

A) Sodium channels open
B) Potassium ions exit the neuron
C) Calcium ions enter the neuron
D) The cell becomes more negative than its resting potential

12. Which part of the brain is most closely associated with the formation of new declarative memories?

A) Brainstem
B) Hippocampus
C) Cerebellum
D) Corpus callosum

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