

Neuroscience Fundamentals

Neuroscience · Answer Key · 18 Questions

1. Which part of the brain is primarily responsible for balance, coordination, and fine motor control?

- A) Cerebrum
- B) Cerebellum**
- C) Brainstem
- D) Thalamus

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

- A) Axon
- B) Myelin sheath
- C) Synapse**
- D) Dendrite

3. Which lobe of the cerebrum is primarily associated with processing visual information?

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

4. What is the main function of the myelin sheath that covers an axon?

- A) To produce neurotransmitters
- B) To increase the speed of electrical impulses**
- C) To protect the cell body
- D) To filter waste from the blood

5. Which of these is the chemical messenger that travels across the synaptic gap?

- A) Neurotransmitter**
- B) Hormone
- C) Enzyme
- D) Antibody

6. The central nervous system consists of the brain and which other major component?

- A) Peripheral nerves
- B) Spinal cord**
- C) Sensory organs
- D) Autonomic ganglia

7. What is the primary role of the frontal lobe?

A) Processing touch

B) Executive function and decision making

C) Hearing

D) Memory storage

8. Which part of a neuron typically receives incoming signals from other neurons?

A) Axon terminal

B) Cell body

C) Dendrites

D) Myelin sheath

9. Which part of the brain regulates essential life-sustaining functions like breathing and heart rate?

A) Cerebellum

B) Brainstem

C) Hypothalamus

D) Hippocampus

10. The somatic nervous system is part of which larger system?

A) Peripheral nervous system

B) Central nervous system

C) Endocrine system

D) Circulatory system

11. What is the primary function of the sensory neurons?

A) Sending signals to muscles

B) Processing complex thoughts

C) Carrying information from the body to the CNS

D) Storing long-term memories

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

A) Hippocampus

B) Amygdala

C) Thalamus

D) Pons

13. What is the name of the fatty, insulating substance that surrounds many axons?

- A) Dendrite
- B) Myelin**
- C) Synapse
- D) Node of Ranvier

14. Which neurotransmitter is most commonly associated with feelings of reward and pleasure?

- A) Dopamine**
- B) Adrenaline
- C) Insulin
- D) Melatonin

15. The 'fight or flight' response is controlled by which division of the autonomic nervous system?

- A) Parasympathetic
- B) Sympathetic**
- C) Somatic
- D) Central

16. Which structure connects the two hemispheres of the brain?

- A) Corpus callosum**
- B) Cerebral cortex
- C) Brainstem
- D) Optic chiasm

17. What is the primary function of motor neurons?

- A) Detecting light
- B) Sending signals to muscles or glands**
- C) Storing genetic data
- D) Filtering spinal fluid

18. Which lobe of the brain is responsible for processing auditory information and language comprehension?

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