What is the Anatomy of the Brain?

Worksheet

The brain's anatomy divides into the cerebrum, cerebellum, and brainstem, plus deeper structures like the hippocampus and amygdala, each responsible for distinct functions such as thought, movement, balance, and survival reflexes.

Questions

1. Which brain structure is primarily responsible for balance and coordination?

A) Cerebrum
B) Cerebellum
C) Hippocampus
D) Amygdala

2. The frontal lobe is mainly responsible for which function?

A) Vision
B) Hearing
C) Decision-making and movement planning
D) Balance

3. Which structure regulates heartbeat and breathing?

A) Cerebellum
B) Brainstem
C) Occipital lobe
D) Hippocampus

4. The hippocampus is most closely associated with which function?

A) Vision
B) Memory formation
C) Muscle movement
D) Hearing

5. A patient has trouble speaking clearly and understanding others' speech after a stroke. Which brain regions are likely damaged?

6. Why does damage to the cerebellum cause a person to lose balance and coordination, even though they can still think clearly?

7. A person's heart rate and breathing suddenly become irregular after a severe brainstem injury. Explain why.

8. Define: What are the three main parts of the brain?

9. Define: What does the cerebrum control?

10. Define: What is the role of the cerebellum?

Answer Key

1. B) Cerebellum - The cerebellum, located below the cerebrum, fine-tunes movement and balance.

2. C) Decision-making and movement planning - The frontal lobe handles reasoning, planning, and voluntary movement.

3. B) Brainstem - The brainstem's medulla oblongata controls these vital autonomic functions.

4. B) Memory formation - The hippocampus is essential for forming new long-term memories.

5. Language production is controlled by Broca's area (frontal lobe) Language comprehension is controlled by Wernicke's area (temporal lobe) Stroke damage to either region on the left hemisphere causes aphasia - difficulty speaking or understanding language

6. The cerebellum sits at the back of the brain, below the cerebrum It coordinates voluntary movement, balance, and posture, but does not control higher reasoning Damage disrupts motor coordination while leaving cognition (cerebrum) intact

7. The brainstem (medulla, pons, midbrain) controls automatic survival functions The medulla oblongata specifically regulates heartbeat, breathing, and blood pressure Injury to this region disrupts these vital autonomic processes, which is why brainstem injuries are often life-threatening

8. The cerebrum, cerebellum, and brainstem.

9. Higher functions: thought, voluntary movement, language, and sensory processing, divided into four lobes.

10. Balance, coordination, and fine motor control.