

**PRACTICE WORKSHEET 2: SKELETAL SYSTEM AND NERVOUS SYSTEM |
CLASS 5 SCIENCE**

A. Multiple Choice Questions

1. What is the main function of the spinal cord?
 - a) To pump blood to the brain
 - b) To protect the skull
 - c) To transmit messages between the brain and body
 - d) To store calcium
 2. Which of the following is an example of a ball-and-socket joint?
 - a) Elbow
 - b) Shoulder
 - c) Knee
 - d) Spine
 3. How many bones does an adult human body have?
 - a) 206
 - b) 208
 - c) 300
 - d) 250
 4. Which part of the brain controls posture and balance?
 - a) Medulla
 - b) Cerebrum
 - c) Cerebellum
 - d) Spinal cord
 5. What protects the brain from injury?
 - a) Ribcage
 - b) Skull
 - c) Vertebrae
 - d) Cartilage
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B. Fill in the Blanks

1. The _____ is the control center of the nervous system.
 2. The _____ joint allows movement in all directions, such as in the shoulders and hips.
 3. _____ connect bones to each other at joints.
 4. The _____ controls involuntary actions like digestion and heartbeat.
 5. The _____ protects the heart and lungs.
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C. True or False

1. The femur is the smallest bone in the human body.
 2. Reflex actions are controlled by the spinal cord, not the brain.
 3. The cerebrum controls voluntary movements and emotions.
 4. The ribcage is made up of 33 small bones called vertebrae.
 5. A gliding joint allows twisting and bending movements.
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D. Short Answer Questions

1. Name any two parts of the nervous system and explain their functions.
 2. What are mixed nerves, and how do they work?
 3. Explain the function of cartilage in joints.
 4. How does the spinal cord protect the body?
 5. What is the purpose of reflex actions, and how do they help us?
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E. Long Answer Questions

1. Describe the role of the skeletal system in protecting vital organs. Provide examples.
2. Explain the types of muscles in the human body and how they differ.
3. How do the cerebrum, cerebellum, and medulla work together in the brain?

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ANSWER KEYS

A. Multiple Choice Questions

1. What is the main function of the spinal cord?

Answer: c) To transmit messages between the brain and body

- The spinal cord serves as the highway for communication, carrying messages from the brain to the rest of the body and vice versa.

2. Which of the following is an example of a ball-and-socket joint?

Answer: b) Shoulder

- Ball-and-socket joints allow movement in all directions and are found in the shoulder and hip.

3. How many bones does an adult human body have?

Answer: a) 206

- Adults have 206 bones, while babies are born with about 300 bones that later fuse together.

4. Which part of the brain controls posture and balance?

Answer: c) Cerebellum

- The cerebellum ensures proper balance, posture, and muscle coordination.

5. What protects the brain from injury?

Answer: b) Skull

- The skull acts as a hard protective layer around the brain, preventing injury.
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B. Fill in the Blanks

1. The *brain* is the control center of the nervous system.
 2. The *ball-and-socket* joint allows movement in all directions, such as in the shoulders and hips.
 3. *Ligaments* connect bones to each other at joints.
 4. The *medulla* controls involuntary actions like digestion and heartbeat.
 5. The *ribcage* protects the heart and lungs.
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C. True or False

1. The femur is the smallest bone in the human body.

Answer: False

- The stapes, a small bone in the ear, is the smallest. The femur is the largest.

2. Reflex actions are controlled by the spinal cord, not the brain.

Answer: True

- Reflex actions are immediate responses to stimuli and bypass the brain for faster reactions.

3. The cerebrum controls voluntary movements and emotions.

Answer: True

- The cerebrum is responsible for voluntary activities and emotional responses.

4. The ribcage is made up of 33 small bones called vertebrae.

Answer: False

- The ribcage has 12 pairs of ribs, while the backbone has 33 vertebrae.

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5. **A gliding joint allows twisting and bending movements.**

Answer: True

- Gliding joints in the wrist, ankle, and spine allow these movements.
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D. Short Answer Questions

1. **Name any two parts of the nervous system and explain their functions.**

Answer:

- **Brain:** Acts as the control center, managing voluntary and involuntary actions, memory, emotions, and thought.
- **Spinal Cord:** Transmits messages between the brain and the body, enabling movement and reflex actions.

2. **What are mixed nerves, and how do they work?**

Answer:

- Mixed nerves carry both sensory and motor signals. They send sensory information from the body to the brain and carry motor commands from the brain to muscles and organs.

3. **Explain the function of cartilage in joints.**

Answer:

- Cartilage is a smooth, flexible tissue covering the ends of bones at joints. It reduces friction and prevents wear and tear during movement.

4. **How does the spinal cord protect the body?**

Answer:

- The spinal cord relays vital messages and is protected by the vertebrae, preventing damage from injuries while ensuring efficient communication within the body.

5. **What is the purpose of reflex actions, and how do they help us?**

Answer:

- Reflex actions are automatic responses to stimuli, such as pulling a hand away from a hot object. They protect the body by enabling quick reactions without waiting for brain processing.
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E. Long Answer Questions

1. **Describe the role of the skeletal system in protecting vital organs. Provide examples.**

Answer:

- The skeletal system acts as a framework and shield for the body. The skull encases the brain, preventing injury. The ribcage surrounds the heart and lungs, safeguarding them from physical damage. Similarly, the backbone protects the spinal cord, which is vital for transmitting messages between the brain and the body.

2. **Explain the types of muscles in the human body and how they differ.**

Answer:

- **Voluntary muscles:** Found in arms and legs, controlled by conscious effort.
- **Involuntary muscles:** Found in organs like the stomach, working automatically.

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- **Cardiac muscles:** Specialized muscles in the heart, functioning tirelessly to pump blood.
Each type has unique roles, ensuring movement, digestion, and blood circulation.
3. **How do the cerebrum, cerebellum, and medulla work together in the brain?**

Answer:

- The **cerebrum** manages thinking, learning, emotions, and voluntary actions.
- The **cerebellum** ensures balance, posture, and smooth coordination of movements.
- The **medulla** controls involuntary functions like breathing and heartbeat.
Together, these parts ensure the brain operates as a cohesive unit, managing both voluntary and involuntary processes efficiently.