**Question 1:**  
Which of the following correctly describes the two main divisions of the vertebrate nervous system?

A) Central and peripheral nervous systems  
B) Somatic and autonomic nervous systems  
C) Sympathetic and parasympathetic nervous systems  
D) Cerebral and cerebellar nervous systems

**Answer:** A) Central and peripheral nervous systems

**Explanation:**  
The vertebrate nervous system is organized into two main divisions: the central nervous system (CNS), which includes the brain and spinal cord, and the peripheral nervous system (PNS), which consists of all the nerves that extend from the CNS to the rest of the body.

**Question 2:**  
What is the primary function of the somatic nervous system within the peripheral nervous system?

A) Regulation of involuntary bodily functions  
B) Control of voluntary muscle movements  
C) Transmission of sensory information to the CNS  
D) Coordination of reflexes

**Answer:** B) Control of voluntary muscle movements

**Explanation:**  
The somatic nervous system is responsible for controlling voluntary muscle movements, transmitting motor commands from the CNS to skeletal muscles. It also conveys sensory information from the body to the CNS.

**Question 3:**  
Which structure serves as the main relay station for sensory information before it is transmitted to the cerebral cortex?

A) Hypothalamus  
B) Thalamus  
C) Medulla oblongata  
D) Cerebellum

**Answer:** B) Thalamus

**Explanation:**  
The thalamus acts as the main relay station for sensory information, processing and transmitting it to the appropriate areas of the cerebral cortex for further interpretation. It plays a crucial role in sensory perception and regulation of motor functions.

**Question 4:**  
What is the primary role of the autonomic nervous system within the vertebrate nervous system?

A) Control of skeletal muscle contractions  
B) Regulation of involuntary physiological processes  
C) Coordination of voluntary movements  
D) Processing sensory information

**Answer:** B) Regulation of involuntary physiological processes

**Explanation:**  
The autonomic nervous system regulates involuntary physiological processes, such as heart rate, digestion, and respiratory rate. It is further divided into the sympathetic and parasympathetic nervous systems, which manage the body's responses to stress and relaxation, respectively.

**Question 5:**  
Which of the following structures is primarily involved in the coordination of balance and motor control in vertebrates?

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

**Answer:** D) Cerebellum

**Explanation:**  
The cerebellum is primarily responsible for coordinating balance, motor control, and fine-tuning movements. It receives input from the sensory systems and other parts of the brain to help maintain posture and execute smooth, coordinated movements.