

## Chapter 7 – Control and Coordination (30 Important Q&A)

---

### Basic Concepts

**Q1. What is control and coordination?**

**Ans:** The process by which organisms respond to stimuli and maintain balance in body functions using the **nervous system** and **hormones**.

**Q2. Name the two systems responsible for control and coordination in humans.**

**Ans:** Nervous system and endocrine system

**Q3. Define stimulus.**

**Ans:** Any change in the environment that produces a response in an organism.

**Q4. Define response.**

**Ans:** Reaction of an organism to a stimulus.

**Q5. What is a receptor?**

**Ans:** Specialized cells or organs that detect stimuli.

---

### Nervous System

**Q6. Main components of human nervous system:**

**Ans:** Brain, spinal cord, and nerves

**Q7. Define neuron.**

**Ans:** Structural and functional unit of the nervous system that transmits impulses.

**Q8. Name the parts of a neuron:**

**Ans:** Cell body, dendrites, axon

**Q9. Function of dendrites:**

**Ans:** Receive impulses from other neurons or receptors.

**Q10. Function of axon:**

**Ans:** Transmit impulses away from the cell body to another neuron or effector.

---

### Types of Neurons

**Q11. Name the types of neurons:**

**Ans:** Sensory neurons, motor neurons, and interneurons (relay neurons)

**Q12. Function of sensory neurons:**

**Ans:** Carry impulses from receptors to spinal cord or brain.

**Q13. Function of motor neurons:**

**Ans:** Carry impulses from brain/spinal cord to effectors (muscles/glands).

**Q14. Function of interneurons:**

**Ans:** Connect sensory and motor neurons; found in brain/spinal cord.

**Q15. What is reflex action?**

**Ans:** Rapid, involuntary response to a stimulus without conscious thought.

---

**Brain and Spinal Cord**

**Q16. Main parts of human brain:**

**Ans:** Cerebrum, cerebellum, medulla oblongata

**Q17. Function of cerebrum:**

**Ans:** Controls voluntary actions, memory, intelligence, and senses.

**Q18. Function of cerebellum:**

**Ans:** Coordinates muscular movements and maintains balance.

**Q19. Function of medulla oblongata:**

**Ans:** Controls involuntary actions like heartbeat, breathing, and swallowing.

**Q20. Spinal cord functions:**

**Ans:** Transmits impulses between brain and body; controls reflex actions.

---

**Endocrine System**

**Q21. Define hormones:**

**Ans:** Chemical messengers secreted by endocrine glands that regulate body functions.

**Q22. Name some major endocrine glands:**

**Ans:** Pituitary, thyroid, adrenal, pancreas, gonads

**Q23. Function of pituitary gland:**

**Ans:** Regulates growth, metabolism, and other endocrine glands; called "master gland."

**Q24. Function of thyroid gland:**

**Ans:** Produces thyroxine to regulate metabolism.

**Q25. Function of adrenal gland:**

**Ans:** Produces adrenaline to help in stress response ("fight or flight").

### Miscellaneous / Plant Control

**Q26. How do plants respond to stimuli?**

**Ans:** By growth movements called **tropisms** (towards or away from stimuli).

**Q27. Define phototropism:**

**Ans:** Growth of a plant towards or away from light.

**Q28. Define geotropism (gravitropism):**

**Ans:** Growth of a plant in response to gravity; roots show positive geotropism, stems negative.

**Q29. Define hydrotropism:**

**Ans:** Growth of plant parts towards water.

**Q30. Which plant hormone is responsible for cell elongation and phototropism?**

**Ans:** Auxin

---