Control & Coordination

Topic Tree for "Control and Coordination"

1. **Introduction to Control and Coordination**
    - Importance of control and coordination in living organisms
    - Systems providing control and coordination: Nervous system and hormonal system
    - Overview of the chapter
2. **Control and Coordination in Animals**
    - **Nervous System**
        - Structure and function of neurons
        - Mechanism of nerve impulse transmission
        - Synapse and neuromuscular junction
    - **Central Nervous System**
        - Structure and function of the brain
        - Regions of the brain: Fore-brain, mid-brain, hind-brain
        - Role of spinal cord
    - **Peripheral Nervous System**
        - Cranial and spinal nerves
    - **Reflex Action**
        - Mechanism of reflex arc
        - Examples of reflex actions
    - **Voluntary and Involuntary Actions**
        - Difference between voluntary and involuntary actions
    - **Hormonal System**
        - Endocrine glands and hormones
        - Mechanism of hormone action
        - Feedback mechanisms in hormone regulation
3. **Control and Coordination in Plants**
    - **Plant Movements**
        - Tropic movements: Phototropism, geotropism, hydrotropism, chemotropism
        - Nastic movements: Thigmonasty, seismonasty
    - **Plant Hormones**
        - Types of plant hormones: Auxins, gibberellins, cytokinins, abscisic acid, ethylene
        - Role of hormones in plant growth and development
        - Mechanisms of hormone action in plants
4. **Comparative Study of Control and Coordination in Animals and Plants**
    - Differences in control and coordination mechanisms between animals and plants
    - Importance of nervous system in animals and hormonal control in plants
5. **Applications and Examples**
    - Examples of control and coordination in daily life
    - Case studies and practical applications in biology and medicine
6. **Exercises and Activities**
    - Questions and exercises based on the chapter
    - Activities to demonstrate principles of control and coordination