

Revision Notes for Biology Chapters 9-11

Chapter 9: Plant Biology

- **Photosynthesis:** The process by which plants use light energy to convert carbon dioxide and water into glucose and oxygen.
- **Importance of Plants:** Plants are the base of the food chain, provide oxygen, and are used for various purposes like medicine, clothing, and biofuels.
- **Plant Structures:**
 - Roots: Anchor the plant, absorb water and minerals.
 - Stems: Support leaves and flowers, transport water and nutrients.
 - Leaves: Capture sunlight for photosynthesis.
 - Flowers: Reproductive structures, produce seeds and fruit.
- **Minerals:** Plants require minerals like nitrates (for protein synthesis) and magnesium (for chlorophyll production).
- **Transport Systems:**
 - Xylem: Transports water and minerals from roots to leaves.
 - Phloem: Transports sugars from leaves to other plant parts.
- **Transpiration:** The process of water evaporating from leaves through stomata.
- **Tips for Checkpoint Exam:**
 - Understand the process of photosynthesis and its importance.
 - Be able to identify and describe the functions of different plant structures.
 - Know the role of minerals in plant growth.
 - Understand how water and sugars are transported within the plant.
 - Be able to explain the process of transpiration.

Chapter 10: Excretion and the Kidney

- **Excretion:** The removal of waste products from the body.
- **Importance of Excretion:** Waste products like urea are toxic and need to be removed to maintain health.
- **Kidneys:** Filter blood to remove urea and other waste products, forming urine.
- **Human Excretory System:**
 - Kidneys: Filter blood.
 - Ureters: Tubes connecting kidneys to the bladder.
 - Bladder: Stores urine.
 - Urethra: Tube through which urine exits the body.
- **Kidney Function:**
 - Filters blood to remove urea and other waste products.
 - Reabsorbs useful substances like glucose back into the blood.
 - Regulates water balance in the body.
- **Tips for Checkpoint Exam:**
 - Understand the importance of excretion and the role of the kidneys.
 - Be able to describe the structures and functions of the human excretory system.
 - Explain the process of blood filtration and urine formation in the kidneys.
 - Understand how the kidneys regulate water balance.

Chapter 11: Human Genetics and Development

- **Reproduction:** The process of creating new organisms.
- **DNA:** The genetic material carrying hereditary information.
- **Chromosomes:** Thread-like structures made of DNA, carrying genes.
- **Genes:** Sections of DNA that code for specific traits.
- **Asexual Reproduction:** One parent produces genetically identical offspring.
- **Sexual Reproduction:** Two parents produce offspring with a mix of genetic material.
- **Gametes:** Sex cells (sperm and egg) with half the number of chromosomes.
- **Fertilisation:** The fusion of sperm and egg to form a zygote.
- **Fetal Development:** The process of a fertilised egg developing into a baby.
- **Factors Affecting Fetal Development:** Maternal health, diet, smoking, and drug use.
- **Tips for Checkpoint Exam:**
 - Understand the different types of reproduction and their outcomes.
 - Be able to describe the roles of DNA, chromosomes, and genes.
 - Explain the process of fertilisation and the importance of gametes.
 - Describe the stages of fetal development and the factors that can influence it.