

The Excretory System

Chapter 9: The Excretory System · Topic 1

Key Concept

Nephrons, the functional units of kidneys, filter blood through a process involving filtration, reabsorption, and secretion to form urine.

Filtration occurs in the glomerulus, where blood pressure forces water and small molecules into the Bowman's capsule, forming a filtrate.

Reabsorption occurs along the tubules, where useful substances like glucose and water are returned to the blood, concentrating the urine.

The kidneys also help regulate blood pressure, pH balance, and water balance in the body, essential for maintaining homeostasis.

Quick Revision Notes

- Nephrons: functional units of kidneys.
- They filter blood forming urine.
- Steps: filtration, reabsorption, secretion.
- Filtration occurs in the glomerulus.
- It forms a filtrate in Bowman's capsule.
- Reabsorption occurs along tubules.
- Useful substances (glucose, water) return to blood.
- Kidneys regulate blood pressure, pH, water balance.

Practice Questions

- 1 Diagram a nephron showing its main parts.
- 2 Explain the three steps of urine formation.
- 3 Discuss the role of the glomerulus in filtration.
- 4 Research how kidneys help regulate blood pressure.
- 5 Discuss why reabsorption is necessary.
- 6 Explain the excretory system in your own words.