

Hormonal Coordination in Plants and Animals

Chapter 6: Control and Coordination · Topic 2

Key Concept

Auxin, produced at a plant's shoot tip, moves to the shaded side of the stem when light hits from one direction, causing greater cell elongation there and bending the shoot towards the light source. In humans, the pancreas releases insulin to regulate blood sugar, the adrenal glands release adrenaline during stress or danger (triggering the 'fight or flight' response, increasing heart rate and alertness), and the thyroid gland releases thyroxine to regulate metabolism — each hormone acting on specific target organs even though it travels throughout the entire bloodstream.

Quick Revision Notes

- Plant hormones: auxin (phototropism/elongation), gibberellins (stem growth), cytokinins (cell division).
- Auxin causes phototropism by promoting more growth on the shaded side of a shoot.
- Human hormones: insulin (blood sugar, pancreas), adrenaline (fight-or-flight, adrenal glands), thyroxine (metabolism, thyroid).
- Hormones travel through the bloodstream but act only on specific target organs.

Practice Questions

- 1 Name one hormone in humans and its function.
- 2 Explain how auxin causes a plant shoot to bend towards light.
- 3 Why can a hormone travelling through the entire bloodstream act only on specific target organs?