

CLASS 11

BIOLOGY

NCERT SOLUTIONS

NCERT Solutions for Class 11 Biology Chapter 13: Plant Growth and Development – Free PDF Download

Chapter 13 of Class 11 Biology is Plant Growth and Development. It covers the phases and characteristics of plant growth, and the roles of the five major plant growth hormones. These Class 11 Biology Chapter 13 solutions are also useful as quick revision notes before exams.

Contents

- Characteristics of Plant Growth
- Phases of Growth
- Plant Growth Hormones (Phytohormones)
- Photoperiodism
- Vernalisation
- Class 11 Biology Chapter 13 – Notes and Extra Questions

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Characteristics of Plant Growth

Plant growth is **indeterminate** (continues throughout life at meristems) and **open** (can occur at multiple points). Growth follows a **sigmoid (S-shaped) curve** with three phases: lag phase (slow initial growth), log/exponential phase (rapid growth), and stationary phase (growth rate declines/plateaus).

Phases of Growth

Meristematic phase (active cell division at root/shoot tips), **elongation phase** (cells increase in size), **maturation phase** (cells differentiate and attain their final structure/function).

Plant Growth Hormones (Phytohormones)

Auxins: promote cell elongation, apical dominance, root initiation. **Gibberellins:** promote stem elongation, seed germination, bolting. **Cytokinins:** promote cell division, delay senescence. **Ethylene:** promotes fruit ripening, senescence, abscission (only gaseous hormone). **Abscisic acid (ABA):** the “stress hormone” — promotes dormancy, stomatal closure, inhibits growth.

Photoperiodism

The response of plants to the relative length of day and night, controlling flowering. Plants classified as **short-day**, **long-day**, or **day-neutral** based on their flowering response to photoperiod.

Vernalisation

The promotion of flowering by a period of low temperature exposure, seen in certain plants (e.g. winter wheat).

Class 11 Biology Chapter 13 – Notes and Extra Questions

Along with these NCERT Solutions, students can also use the [Class 11 Biology Chapter 13 Extra Questions](#) and [Class 11 Biology Chapter 13 Revision Notes](#) for quick revision and extra practice.

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