

CLASS 11

BIOLOGY

NCERT SOLUTIONS

NCERT Solutions for Class 11 Biology Chapter 10: Cell Cycle and Cell Division – Free PDF Download

Chapter 10 of Class 11 Biology is Cell Cycle and Cell Division. It covers the phases of the cell cycle, mitosis, and meiosis, and their significance in growth, repair, and reproduction. These Class 11 Biology Chapter 10 solutions are also useful as quick revision notes before exams.

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The Cell Cycle

The sequence of events by which a cell duplicates its contents and divides into two. Consists of **interphase** (G1, S, G2 phases — growth, DNA replication, preparation) and **M phase** (mitosis, actual division).

Interphase

G1 phase: cell growth, metabolically active, no DNA synthesis. **S phase:** DNA replication occurs, chromosome number remains same but DNA content doubles. **G2 phase:** further growth, preparation for mitosis (protein synthesis for spindle formation).

Mitosis

Division producing two **genetically identical diploid daughter cells**. Phases: **prophase** (chromosome condensation), **metaphase** (chromosomes align at equator), **anaphase** (sister chromatids separate to opposite poles), **telophase** (nuclear envelope reforms, cytokinesis follows). Important for growth and repair.

Meiosis

Reductional division producing four **genetically variable haploid daughter cells** from one diploid cell, essential for sexual reproduction. Consists of two divisions: **Meiosis I** (reductional, homologous chromosomes separate, crossing over occurs in prophase I) and **Meiosis II** (equational, similar to mitosis, sister chromatids separate).

Significance of Meiosis

Maintains constant chromosome number across generations (halves it, restored at fertilization) and generates **genetic variation** through crossing over (prophase I) and independent assortment.

Class 11 Biology Chapter 10 – Notes and Extra Questions

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