

# Cell Cycle & Cell Division - NCERT Short Notes

## Interphase (95%)

- G1 phase: Cell growth, RNA & protein synthesis
- S phase: DNA replication (chromosome = 1 to 2 chromatids)
- G2 phase: Organelle duplication, preparation for mitosis

## M Phase (Mitosis phase)

- Includes Karyokinesis (nuclear division) and Cytokinesis (cytoplasmic division)

## Mitosis (Equational division)

- Prophase: Chromosomes condense, spindle forms, nuclear membrane breaks
- Metaphase: Chromosomes align at equator
- Anaphase: Sister chromatids separate
- Telophase: Nuclear membrane reforms, chromosomes decondense

## Cytokinesis

- Animal cell: Cleavage furrow
- Plant cell: Cell plate formation

## Meiosis (Reductional division)

- Happens in diploid germ cells -> produces haploid gametes
- Meiosis I: Homologous chromosomes separate
- Meiosis II: Sister chromatids separate (like mitosis)

## Key Points:

- Mitosis = growth & repair

- Meiosis = gamete formation
- DNA replicates in S phase only
- No G1, G2 in meiotic interkinesis sometimes