



# SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

**AN AUTONOMOUS INSTITUTION**

Accredited by NAAC – UGC with 'A' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

**Department of Mechanical Engineering**

## 19BY701 - BIOLOGY FOR ENGINEERS

### UNIT -3 | GENETICS AND IMMUNE SYSTEM

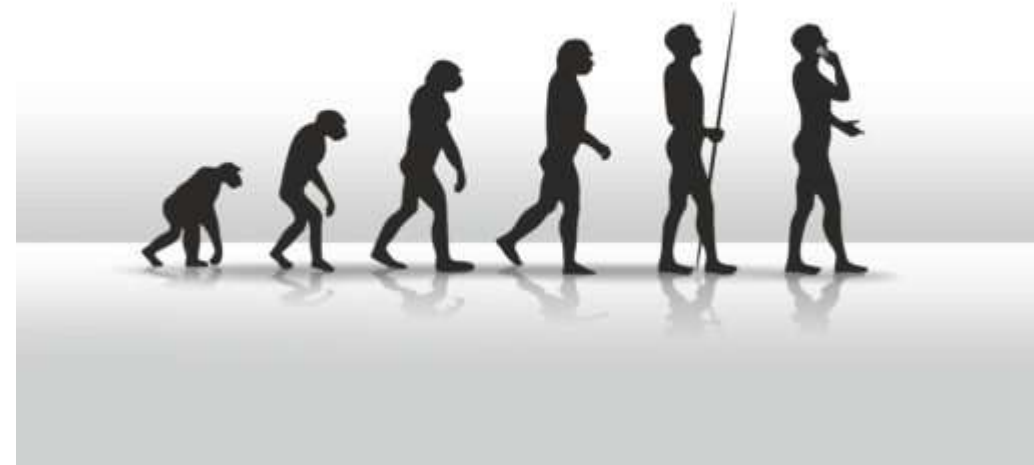
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Ap/Mech

# EVOLUTION

- Evolution is **the process by which species adapt over time in response to their changing environment**
- Evolutionary processes give rise to diversity at every biological organization level.
- All life on earth shares a common ancestor known as the last universal ancestor.



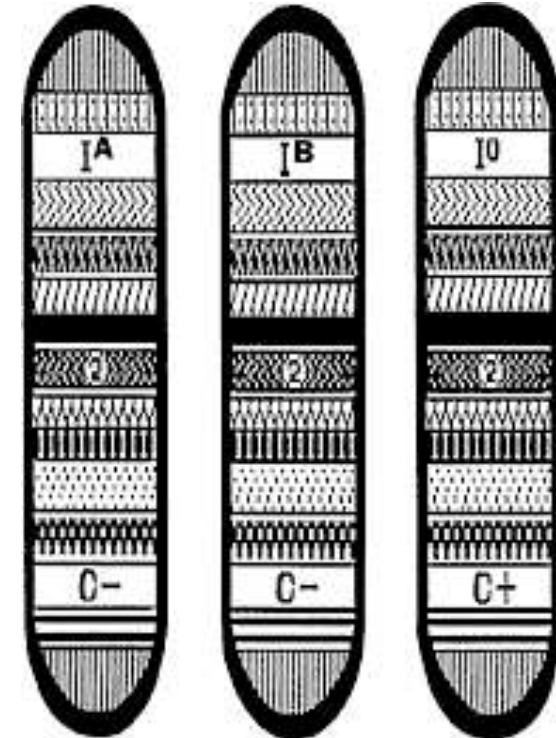
# THEORIES OF EVOLUTION

- Darwin and a scientific contemporary of his, Alfred Russel Wallace, proposed that evolution occurs because of a phenomenon called **natural selection**.
- In the theory of natural selection, organisms produce more offspring than are able to survive in their environment.



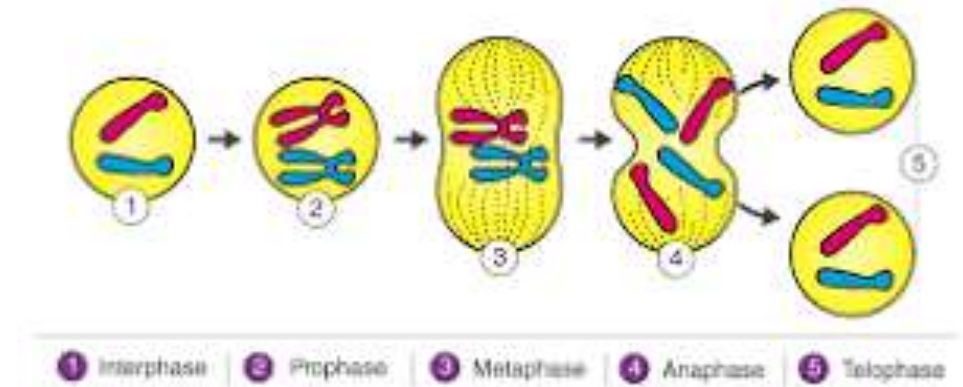
# MENDEL'S CELL DIVISION

- We now know that this independent assortment of genes occurs during meiosis in eukaryotes.
- **Meiosis is a type of cell division that reduces the number of chromosomes in a parent cell by half to produce four reproductive cells called gametes.**



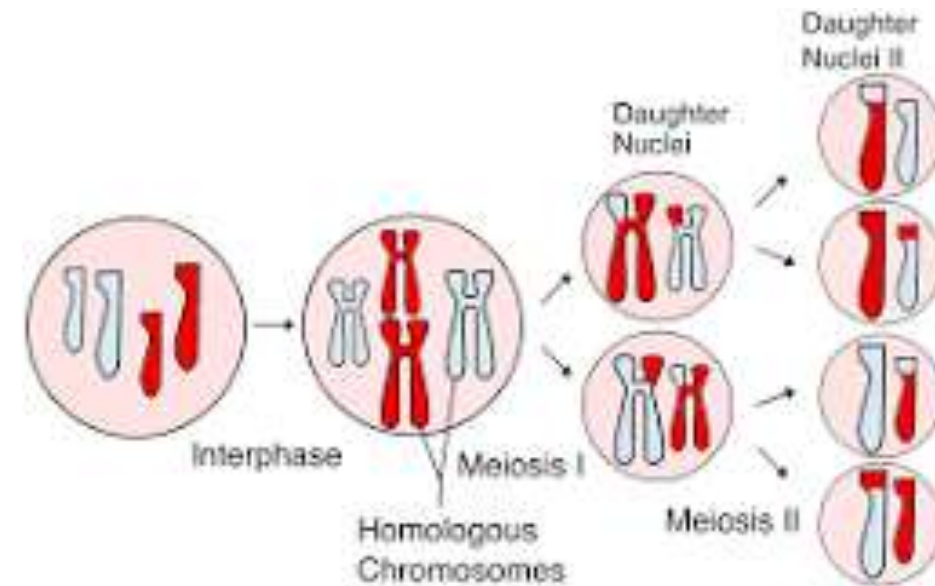
# MITOSIS

- Mitosis is a type of cell division in which one cell (the mother) divides to produce two new cells (the daughters) that are genetically identical to itself.
- In the context of the cell cycle, mitosis is the part of the division process in which the DNA of the cell's nucleus is split into two equal sets of chromosomes



# MEIOSIS

- Meiosis is a type of cell division that reduces the number of chromosomes in the parent cell by half and produces four gamete cells.
- This process is required to produce egg and sperm cells for sexual reproduction.





# ASSESSMENT

## Match the Following

1. MITOSIS
  2. MEIOSIS
- a. Reaction which occurs within an organism
  - b. reduces the number of chromosomes in the parent cell