Leaving Cert Agricultural Science

Free Notes

Potato Blight

Mitosis

There are 4 main stages in Mitosis. Mitosis is a method of cell division where two identical cells are produced from the mother cell.

a) Prophase

- The **chromosomes begin to appear** in the cell
- Each chromosome duplicates and form **sister chromatids** that are joined in the centre.
- Now the **nuclear membrane** and the **other organelles** begin to **disappear**.
- **Spindle fibres** start to **form** in the cell and **centriole** begins to **migrate from** the **poles**.

b) Metaphase

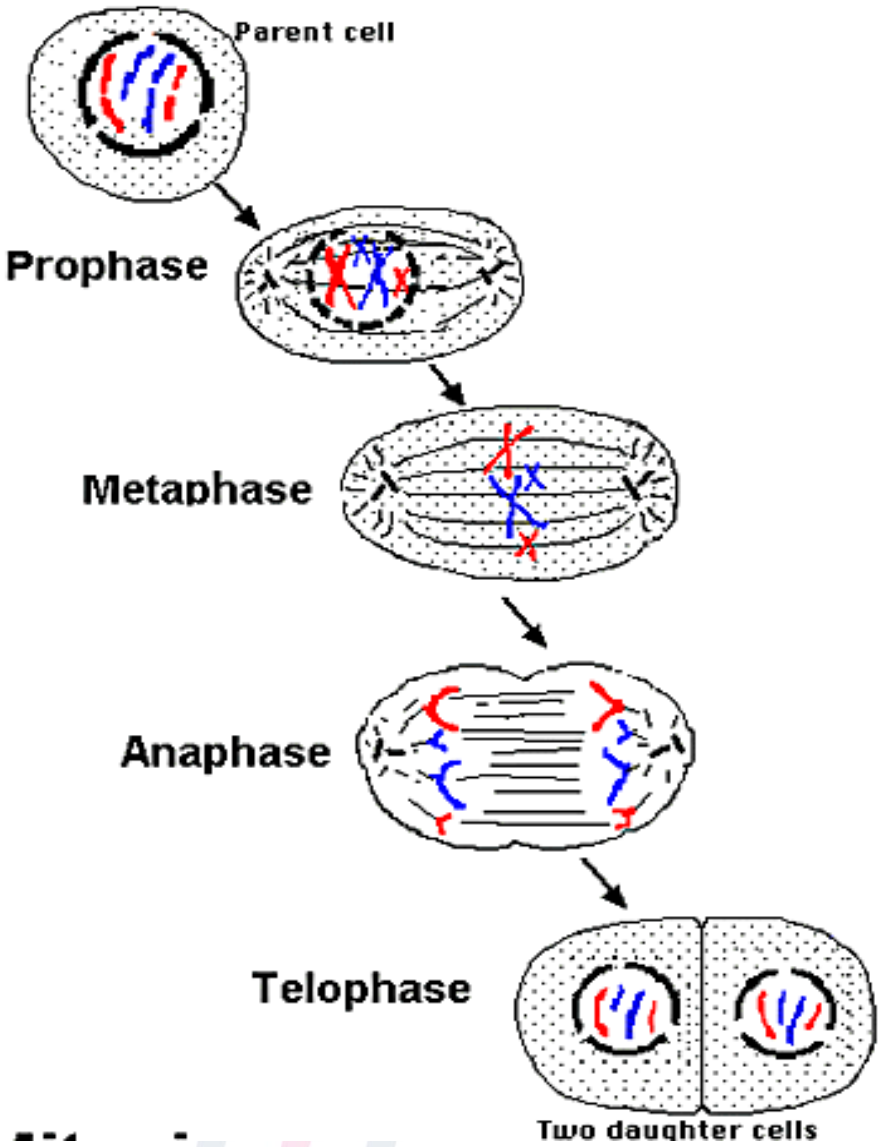
- The chromosomes begin to line up towards the centre of the cell.
- Now the spindle fibres attaches to the centromere of the chromosome.

c) Anaphase

- Spindle fibres contract.
- Separated strands form and each new one are called a chromosome.
- These are now pulled to **opposite ends of the poles**.

d) Telophase

- The **cytoplasm now** begins to **divide** into two **separate** two cells.
- This is called **cytokinesis**.
- The chromosomes uncoil to from **chromatin**.



Q) Where does mitosis occur?

- Occurs in the tips of shoots and roots of plants.
- In animals it is occurring constantly in the bone marrow which produces new red blood cells, skin cells and lining of organs etc.
- It also occurs in metamorphosis in insects (revise phylum Arthropoda)

Q) Outline the significance of mitosis.

- Two identical daughter cells are formed during this process.
- Genetic material of the mother and the daughter cell are completely identical.
- This is essential for the repair of our cells which are worn and torn over time.

- Particular organisms reproduce by this method. **Bacteria** reproduce by mitosis known as **Binary Fission**.

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