

Chapter 5

THE FUNDAMENTAL UNIT OF LIFE

Keywords/Definitions:

Prokaryotic cells:

Prokaryotic cells, which do not have a well-defined Nuclear membrane and the nuclear material lies freely in the cytoplasm of the cell.

Ex: Bacteria, Blue green Algae

Eukaryotic cells:

Eukaryotic cells, having nuclear with well-defined nuclear membrane.

Ex: Plant cells

Unicellular organisms:

Number of cells organisms made of only a single cell are called “Unicellular organism”.

Ex: Amoeba

Multicellular organisms:

Organism made up of more than one cells are called multicellular organisms.

Ex: Humans

Cell Wall:

The cell wall was first observed by Robert hook, which is non-living rigid wall. It is freely permeable allowing the substances in and out of the cell.

Plasma membrane:

The plasma membrane is present in animal cells, plant cells and even prokaryotic cells.

Endomembrane System:

Some cell organelles such as endoplasmic reticulum, Golgi apparatus, lysosomes and vacuoles come under the endomembrane system.

Cytoplasm:

Bulk of the cell is made up off a dense, viscous, colloidal man called “cytoplasm”.

Lysosomes:

They are spherical organelles, which contains enzymes that help in maintaining the physiologic turnover of cellular constituents.

Golgi apparatus:

Camillo golgi discovered the cell organelle golgi bodies. It consists of a system of membrane-bound vesicles arranged approximately parallel to each other in stacks called cisterns.

Vacuoles:

Vacuole is surrounded by a layer called as "Tonoplast layer".

Vacuoles are storage Sacs for solid or liquid contents. Vacuoles are small sized, in animal cells, while plant cells have very large vacuoles.

Mitochondria:

Mitochondria is double membrane bound cell organelle found in plant cells. It's outer membrane is continuous and contain some pore on it.

Nucleolus:

The nucleoplasm contains a spherical body called "Nucleolus".

Mitosis:

It occurs in somatic cells in which mother cell divides and forms 2 identical daughter cells.

Meiosis:

It occurs in the germ cells to produce gametes for the reproduction.