Cell-Structure and Functions

SUMMARY

Introduction to Cells

With the help of a **microscope**, an English scientist, **Robert Hooke**, first discovered the existence of cells in 1665. **Scanning electron microscopes** are used to examine the external parts of various organisms.

The **transmission electron microscope** is used to view the internal structure of a cell and its organelles. Organisms that are made up of a single cell and perform all their vital activities, like reproduction, locomotion and digestion, are called **unicellular** organisms. Organisms that are made up of more than one cell are called **multicellular** organisms.

Amoeba uses small finger-like projections called **pseudopodia** for locomotion and to capture prey. **Paramecium** is a single cell and is built in such a way that it performs all its vital activities, like reproduction, locomotion, digestion, and so on.

The **White Blood Corpuscle** (WBC) is the only animal cell that changes its shape. The branched structure of a **neuron** helps it to transfer messages to all parts of the body.

Structure and Function of Cells

The black layer or the scab that you see on the wound is a result of the aggregation of dead **Red Blood Cells (RBCs)**.The nose and the lungs form part of an organ system, the **respiratory system**. All **organ systems** work together to form a complex organism.

The **cytoplasm** is a jelly-like fluid present between the nucleus and the cell membrane. The **cell membrane** allows the movement of minerals and other substances in and out of the cell. The **nucleus** controls the activities of a cell.

Methylene blue is the stain placed on plant and animal cells to differentiate the nucleus under a microscope. Chromosomes are called vehicles of heredity because they carry genes and help in the **inheritance** or transfer of characteristics from the parents to the offspring.

Bacteria and blue-green algae that contain nucleoids are called **prokaryotes**. Organisms that have a well-organised nucleus are called **eukaryotes**. The nuclear material in unicellular organisms does not contain a nuclear membrane, and hence is called a **nucleoid**.

The **nucleolus** is a small, spherical body in the nucleus. **Chloroplast** is a type of **plastid** involved in photosynthesis in plants. A **vacuole** is present in both plant and animal cells, but it looks much smaller in animal cells.