The Fundamental Unit of Life Introduction of Cell and Cell Theory

- Robert Hooke in 1665 observed honey comb structure from a thin slice of cork through a selfdesigned microscope. He found that these consists of many little compartments or boxes whom he called **cells**.
- 2. Cell is a Latin work for a 'a little room'.
- 3. **Leeuwenhoek** in 1674 discovered the free living cells in pond water for the first time the help of improved microscope.
- 4. **Robet Brown** in 1831 discovered the nucleus in the cell.
- 5. **Purkinje** in 1839 coined the term 'protoplasm' for the fluid substance of the cell.
- 6. Cell Theory was given by two biologists : Schleiden (1838) and Schwann (1839).According to theory :

All the plants and animals are composed of cells.

The cell is the basic unit of life.

The cell theory was further expanded by Virchow (1855) by suggesting that

* The All cells arise from pre-existing cells.

- The discovery of electron microscope in 1940 made it possible to observe and understood the complex structure of the cell and its various organelles.
- 8. The organisms such as **Amoeba**, **chlamydomonas**, **Paramoecium and bacteria** are made of single cell and are called **unicellular organisms**.
- 9. In many multicellular animals such as some fungi, plants and animals, many cells group together in a single body and assume different functions in it to form various body parts.
- 10. The shape and size of the cells are related to the specific function they perform. Some cells like Amoeba having changing shapes while nerve cells have a typical shape.
- 11. Each living cell has the capacity to perform certain basic functions that are characteristic of all living forms beside some special functions.
- 12. Each cell has got certain specific components within it known as cell organelles. A cell is able to live and perform all its functions because of these organelle. These organelles together constitute the basic unit called the cell.

Interesting Fact : All cells are found to have same organelles, no matter what their function is or what organism they are found in.

13. The cells are basically of two types

(i) **Prokaryotic**

(ii) Eukaryotic

Prokaryotic cells are simple and do not have the nuclear membrane and the organelles which are bound by the membranes like mitochondria, endoplasmic reticulum, golgi apparatus, lysosomes, peroxisomes.

14. Eukaryotic cells are complex and possess a nuclear membrane and membrane bound organelles. A typical **eukaryotic cell has three major parts** :

A plasma membrane enclosing the cell, A nucleus containing DNA and RNA, and the cytoplasm with the cell organelles.