# Cell Introduction

PART - 1

- Cell is regarded as a fundamental structural and functional unit of life.

**1665** — **Robert Hooke** observed dead cells in a thin cork slice through a self-made microscope & published this information in his book '**Micrographia**'.
He gave the name '**Cell**'.

**1674** — **Antonie van Leeuwenhoek** designed an improved microscope and observed first free-living cells (**Bacteria**)

**1831** — **Robert Brown**, a Scottish Botanist discovered **nucleus**.

**1834** — A French Zoologist **Dujardin** discovered the semifluid living material inside a cell and named it **Sarcode.**

**1840** — **Purkinje** renamed it as '**Protoplasm – The First Substance**'

## Cell Theory

**M.J. Schleiden**
A German botanist (1838)
All plants are made up of cells

**T. Schwann**
A German zoologist (1839)
All animals are made up of cells

**Commonly presented CELL THEORY**

**POSTULATES**

- All living organisms are composed of cells.
- All cells are basically alike in structure and functions.
- The function of an organism as a whole is the result of the activities and interactions of constituents of the cell.

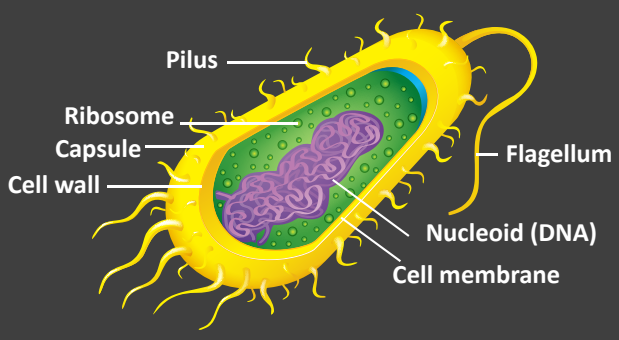
## Modern Cell Theory

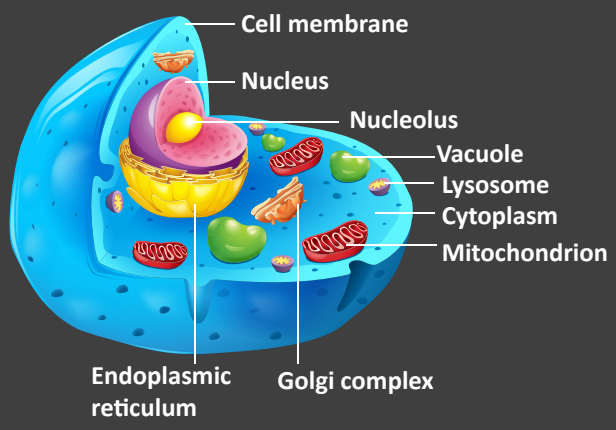
**Rudolf Virchow** presented the idea '*Omnis Cellula e Cellula*' in (1858) and gave the idea that all living cells arise from pre-existing cells.

# Cell Introduction

PART - 2

## TYPES OF CELLS




| Prokaryotic cell | Eukaryotic cell |
|---|---|
| Pro - Primitive; Karyon - Nucleus | Eu - True; Karyon - Nucleus |
| The nuclear membrane is absent. Content of nucleus present in the cytoplasm in a region known as nucleoid. | Nucleus distinct with the nuclear membrane. |
| Size: 1µm to 10 µm | Size: 5 µm to 100 µm |
| Membrane-bound cell organelles are absent. | Membrane-bound cell organelles like Golgi bodies, mitochondria etc. are present. |
| Ribosome - 70 S | Ribosome - 80 S |
| A single circular chromosome is present | Many chromosomes are present which are linear. |
| Respiratory enzymes are present in mesosome. | Respiratory enzymes are formed in mitochondria. |

## CELL FACTS

| Shape & Size | | Varies from cell to cell |
|---|---|---|
| Longest cell in human body | - | Nerve cell (1m long) |
| Smallest cell in human body | - | Red blood cells |
| Largest cell in human body | - | Female ovum |
| In multicellular organisms division of labour is seen. | - | In unicellular organisms a single cell perform all the functions. (Amoeba) |