

# THE FUNDAMENTAL UNIT OF LIFE

## Cell

### 1 Discovery

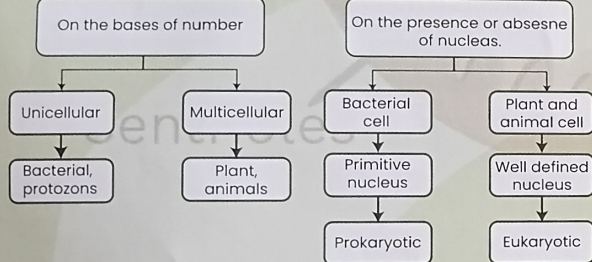
Robert Hooke in 1665  
Robert Brown discovered nucleus in the cell in 1831  
Anton Van Leeuwenhoek observed the living cell in pond water with the help of primitive microscope in 1674.

### 2 Cell theory

Schleiden and Schwann gave cell theory which states that all plants and animals are composed of cells.

Rudolf Virchow (1855) modified the cell theory and explained that the cells are divided to form new cells from pre-existing cells. (*Omnis cellula-e cellula*).

### 3 Classification of cells



### 4 Characteristics of plant cell

- Cell wall present
- Centrosome absent
- Chloroplast present
- Vacuole larger in size

### 5 Characteristics of animal cell

- Lack cell wall
- Centrosome present
- Chloroplast absent
- Vacuole are absent or smaller in size

### 6 Division

Mitosis (equational division)

- a. Occurs in somatic cell.
- b. 2 Diploid daughter cells are produced.
- c. Involves in healing and growth.

Meiosis (reductional division)

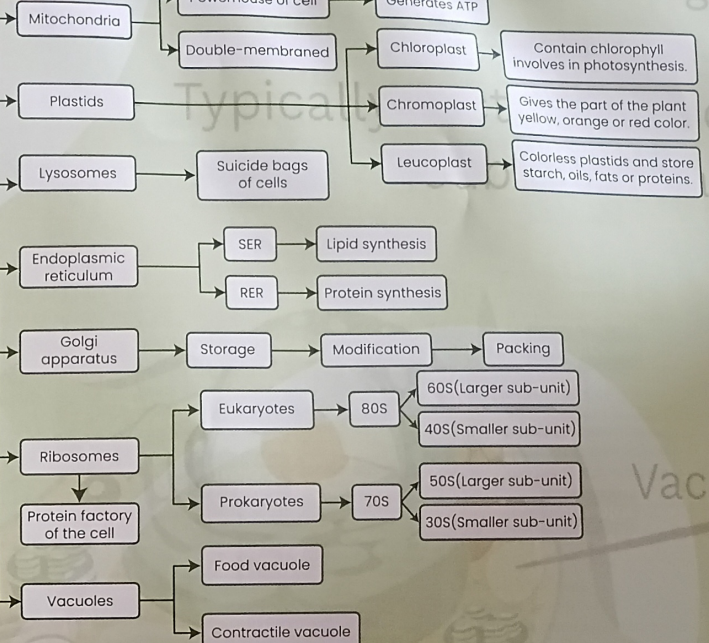
- a. Occurs in germ cells.
- b. 4 Haploid daughter cells are produced.
- c. Involves in genetic variations.

### 9 Cytoplasm

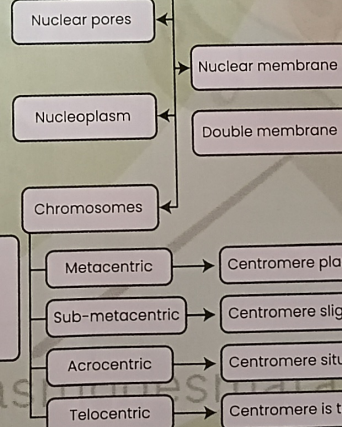
- 2. Made up of bilayer of phospholipids and proteins.
- 1. Selectively permeable

### 7 Cell membrane

### 10 Organelles



### 8 Nucleus



### Transport of substances

