#The Fundamental Unit of Life \* 3 Topics - \* Discovery \* Structure of cell \* Cell Division

## Discovery of Cell

* Robert Hooke:-
  + 1665
  + Cork cell
  + Honeycomb structure
  + cell - Latin - Little room
* Leeuwenhooke:-
  + 1674
  + Living cell
  + pond water
  + single cell organism
* Robert Brown:-
  + 1831
  + Nucleus
* Purkinje:-
  + 1839
  + Protoplasm
  + Living part
  + cytoplasm + nucleoplasm ### Cell Theory
* cell is the basic and fundamental unit of life.
* all plants and animals are made of cells
* Come from pre-existing cells
* First 2 theories - Schleiden(1838), Schwann(1838)
* Last theory - Virchow (1855) ### Activity Preparation of Temporary mount of onion peel
* Cut the onion bulb
* peel the inner layer
* Place on drop of water on watch glass
* Peel to transfer on watch glass
* Stain in safrin solution
* Observe under microscope

## Structure of the Cell:-

* Made up of Nucleus
* Cell membrane
* Cytoplasm

### Plasma Membrane

* Semi-permeable
* bilayer of lipids.
* Outermost covering of the cell that separates the contents of the cell from its external environment
* Hypertonic - Cell will shrivel - Osmosis
* Isotonic - Cell is stable - Osmosis
* Hypotonic - cell will expand and burst - Osmosis #### Functions
* Plasma Membrane selectively regulates the entry and exit of the substances into and out the cell.
* Therefore, it is called selectively permeable membrane or semi-permeable membrane
* It provides the outer boundary to the cell and protects teh cell from injury
* Provides organic connections between the adjacent cells
* Allows swallowing food by endocytosis - taking in of external material due to the **flexibility** of plasma membrane
* Osmosis & Diffusion - Passive transport - No energy
* Active transport - Lower Concentration to Higher concentration - High energy
* Mechanic Barrier
* Recongnition- there is a substance on the cell which helps it recognise things
* can differentiate to perform specific tasks- absorption of nutrients in micro villi.

Nucleolus of Nucleus produces ribosomes- so no proteins