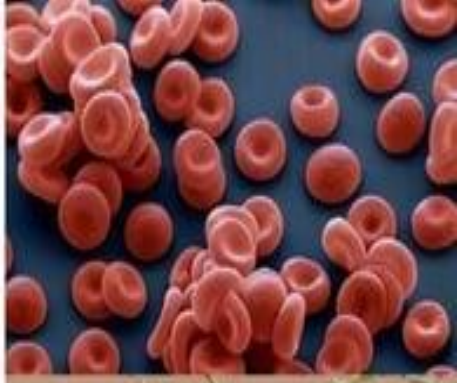
Shape of Cells

Cells vary in shape.

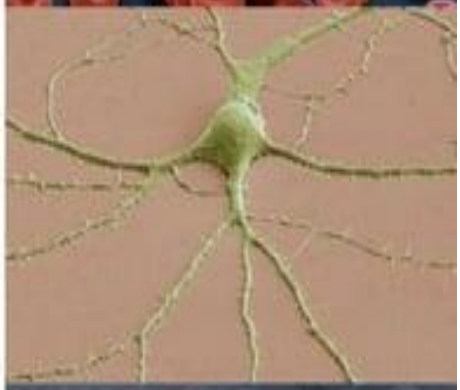
Variation depends mainly upon the function of cells.

Some cells like Euglena and Amoeba can change their shape, but most cells have a fixed shape.

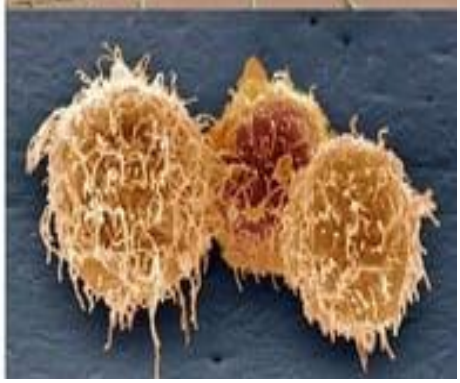
Human RBCs are circular biconcave for easy passage through human capillaries.



Nerve cells are branched to conduct impulses from one point to another.



Human WBCs can change their shape to engulf the microorganisms that enter the body.



Structure Of Cell

The detailed structure of a cell has been studied under compound microscope and electron microscope.

Certain structures can be seen only under an electron microscope.

The structure of a cell as seen under an electron microscope is called ultrastructure.

Compound microscope

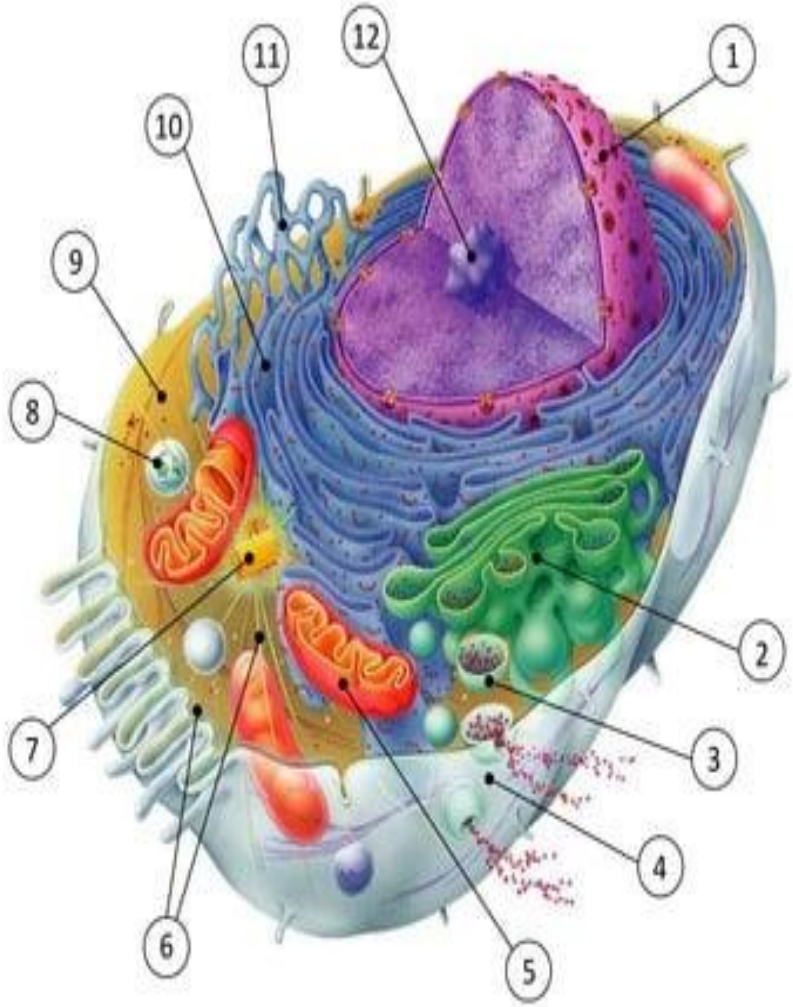
Magnification 2000X

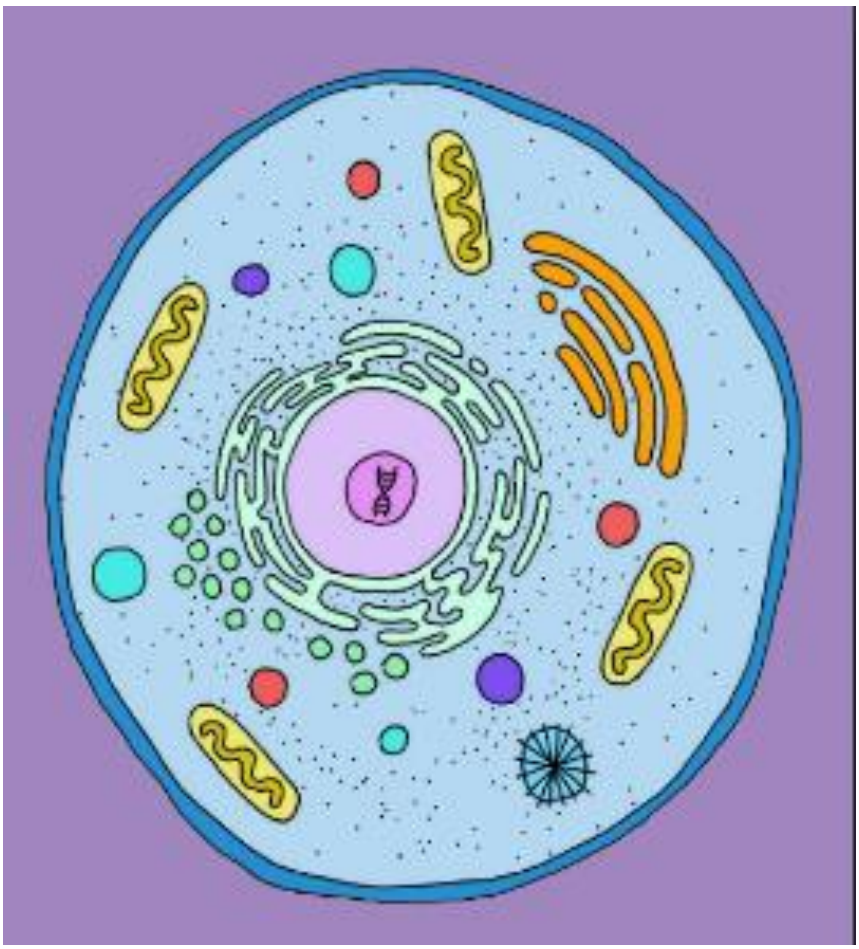
Electron microscope

Magnification 500000X

Animal Cell

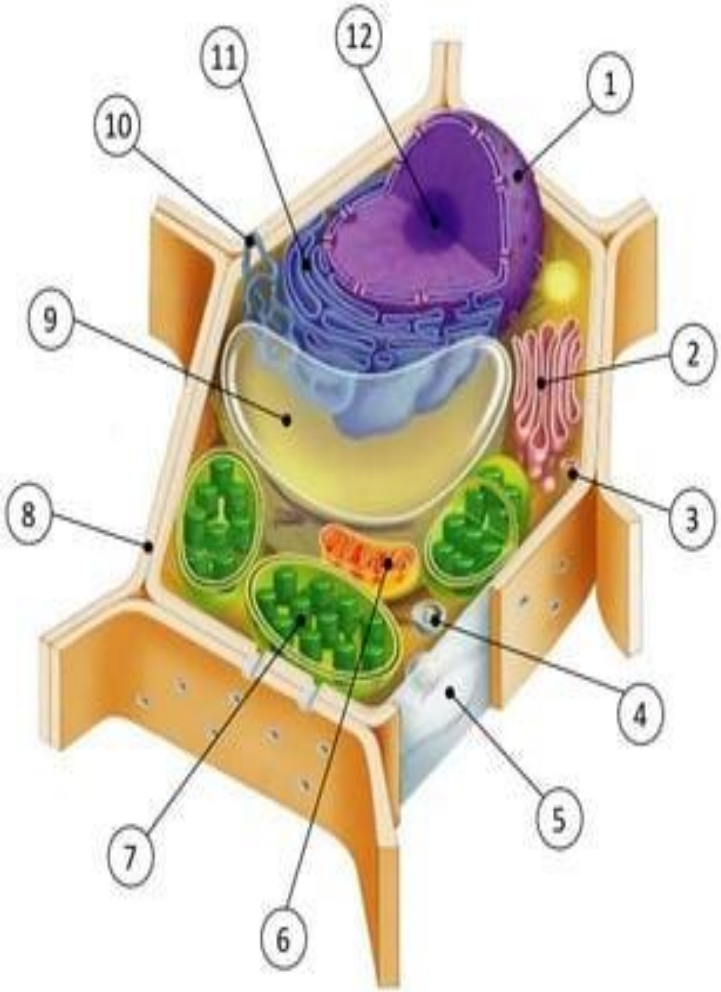
1. Nucleus
2. Golgi body
3. Vesicle
4. Plasma membrane
5. Mitochondria
6. Cytoskeleton
7. Centriole
8. Lysosome
9. Cytoplasm
10. Rough endoplasmic reticulum
11. Smooth endoplasmic reticulum
12. Nucleolus





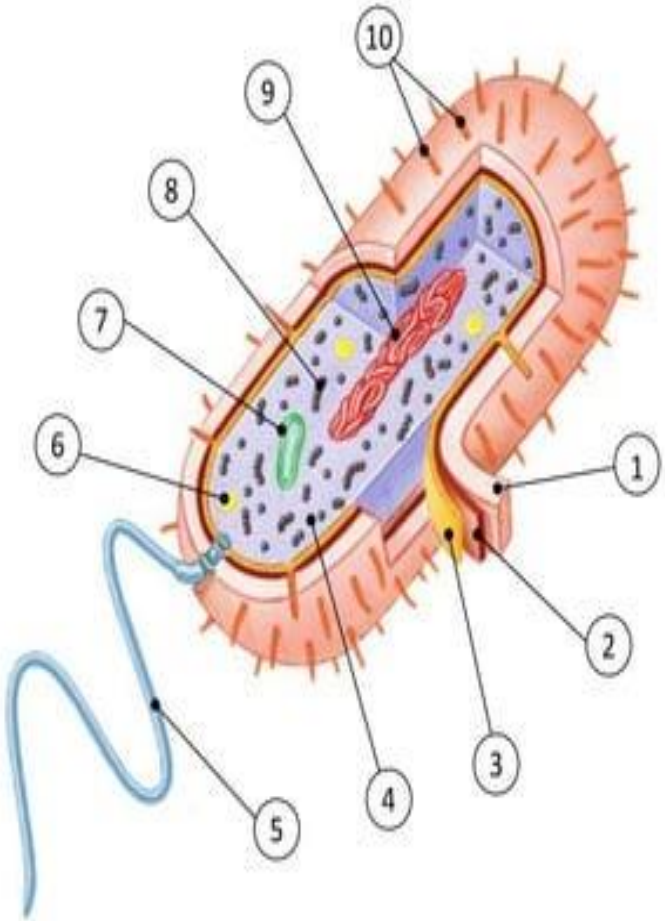
Plant Cell

1. Nucleus
2. Golgi body
3. Vesicle
4. Lysosome
5. Plasma membrane
6. Mitochondria
7. Chloroplast
8. Cell wall
9. Vacuole
10. Smooth endoplasmic reticulum
11. Rough endoplasmic reticulum
12. Nucleolus



Bacterial Cell

1. Capsule
2. Cell wall
3. Plasma membrane
4. Cytoplasm
5. Flagellum
6. Food granule
7. Plasmid (DNA)
8. Ribosomes
9. Nucleoid
10. Pili



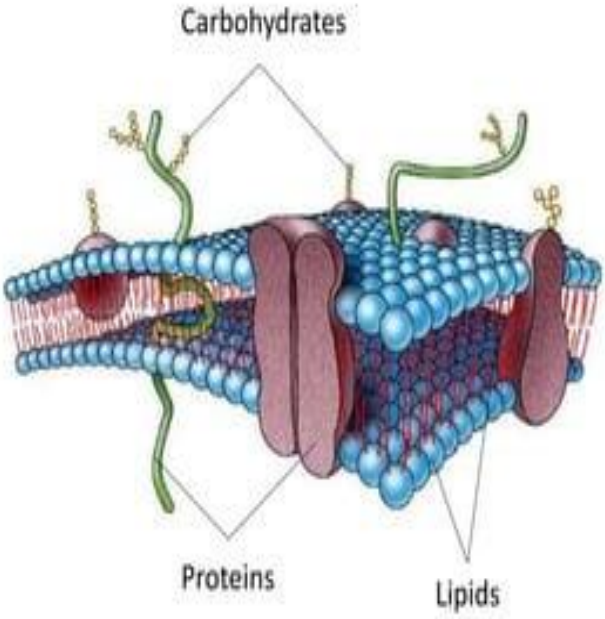
Structure Of Cell

If we study a cell under a microscope, we would come across three features in almost every cell: plasma membrane, nucleus and cytoplasm.

All activities inside the cell and interactions of the cell with its environment are possible due to these features.

1. Plasma Membrane
2. Nucleus
3. Cytoplasm
    A. Cytosol
    B. Cell Organelles
        a) Endoplasmic reticulum
        b) Golgi body
        c) Lysosomes
        d) Vacuoles
        e) Mitochondria
        f) Plastids
        g) Centrosome
        h) Cytoskeleton

Plasma Membrane



- Extremely delicate, thin , elastic, living and semi-permeable membrane
- Made up of two layers of lipid molecules in which protein molecules are floating
- Thickness varies from 75-110 A°
- Can be observed under an electron microscope only

Functions:

- Maintains shape & size of the cell
- Protects internal contents of the cell
- Regulates entry and exit of substances in and out of the cell
- Maintains homeostasis