# Cell-The Unit of Life

**(1) Cytology:** (G.k. kyios = cell ; logas = study) is the branch of biology which comprises the study of cell structure and function.

(2) Cell is the structural and functional unit of all living beings.

(3) There are two types of cells: plant cell and animal cell.

| Plant cell | Animal cell |
|---|---|
| Cell wall present. | Cell wall absent. |
| Nucleus usually lies near periphery due to vacuole. | Nucleus present near the centre. |
| Centrosome is usually absent from higher plant cells, except lower motile cells. | Usually centrosome is present that helps in formation of spindle fibres. |
| Plastids are present, except fungi. | Plastids are absent. |
| Mitochondria is generally spherical or oval in shape. | Generally tubular in shape. |
| Single large central vacuole is present. | Many vacuoles occur which are smaller in size. |
| Number of mitochondria from 200 – 2000. | Number of mitochondria is approximately 1600 – 16000 in liver cells. |
| Cytoplasm during cell division usually divides by cell plate method. | Cytoplasm divides by furrowing or cleavage method. |
| Plant cells are capable of forming all the amino acids coenzymes and vitamins. | Animal cells cannot form all the amino acids, coenzymes and vitamins. |
| There is no contractile vacuole. | Contractile vacuole may occur to pump excess water. |
| Sodium chloride is toxic to plant cells. | Tissue fluid containing sodium chloride bathes the animal cells. |
| Plant cells are generally well over 100 micrometer long. | Generally much smaller than 100 micrometer |
| Spindle formed during cell division is anastral. | Spindle formed during cell division are amphiastral. |
| Lysosomes present in less number. | Lysosomes present in more number. |
| Chromosomes are larger in size. | Chromosomes are smaller in size. |