

Fig. 3.8 A generalised plant cell (diagrammatic) showing finer details as observed under an electron microscope

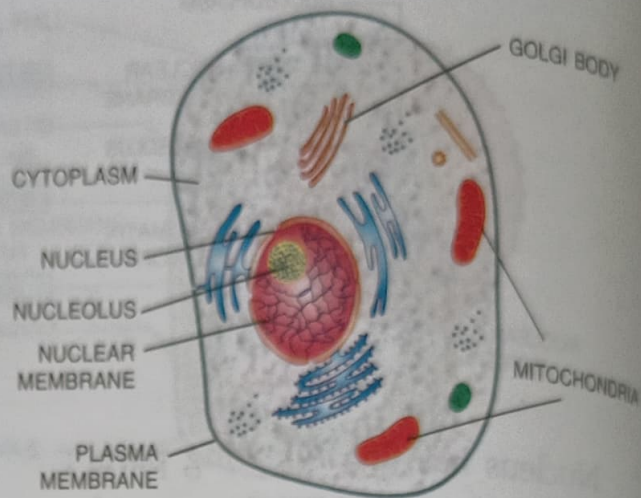


Fig. 3.9 A generalised animal cell showing finer details as observed through an electron microscope

petals of flowers, they attract insects for pollination.

(iii) **Leukoplasts** are colourless plastids which occur in seeds. They store starch, fats and proteins.

### Vacuoles

Vacuoles are the non-living inclusions in the cytoplasm bound by a membrane. These are filled with water and various substances in solution form called cell sap.

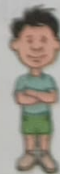
- In **plant cells**, the vacuoles are fewer but quite large in size.
- In **animal cells**, the vacuoles are larger in number and smaller in size.

### Cell Division — A need to produce new cells

New cells need to be produced for (1) replacement, (2) repair, (3) reproduction and (4) growth. Thus, cell division is the necessity for the existence of all living organisms, including plants.



### REVIEW QUESTIONS



#### Multiple Choice Questions :

1. Put a tick (✓) against the most appropriate alternative in the following statements.

(i) Identify the part which contains pigment :

(a) cell membrane

(b) plastid

(c) centrosome

(d) cell wall

(ii) The organelle that controls all activities in a cell :

(a) nucleus

(b) vacuole

(c) plastids

(d) cytoplasm

(iii) A cell that is spherical in shape is :

(a) white blood cell

(b) nerve cell

(c) red blood cell

(d) amoeba

(iv) The vacuole contains :

(a) water

(b) cell sap

(c) salts

(d) food

### Short Answer Questions :

1. Name the scientist who invented the first microscope.

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2. Who coined the term "cell" ?

.....

3. Briefly describe the three essential parts of a cell.

4. The cell membrane is called selectively permeable. Why ?

5. State the difference between :

(i) Nucleus and nucleolus.

(ii) Cytoplasm and protoplasm.

(iii) Cell wall and cell membrane.

6. List the major differences between a plant cell and an animal cell.

7. Briefly discuss the importance of chromosomes in an organism.

8. Fill up the blanks with the terms given below in the box.

pigments, wall, pre-existing, cell, vacuoles.

(i) The ..... is the structural unit of all living things.

(ii) All cells arise from ..... cells.

(iii) Animal cells have no cell .....

(iv) Plastids contain .....

(v) ..... are filled with water and dissolved substance.