



## Chapter-8

### Cell – Structures and Functions

#### SOLUTIONS:

#### Exercises

1. Indicate whether the following statements are True (T) or False (F).

- (a) Unicellular organisms have one-celled body. (T/F)
- (b) Muscle cells are branched. (T/F)
- (c) The basic living unit of an organism is an organ. (T/F)
- (d) *Amoeba* has irregular shape. (T/F)

Ans.: (a) T

(b) F

(c) F

(d) T

2. Make a sketch of the human nerve cell. What function do nerve cells perform?

Ans:

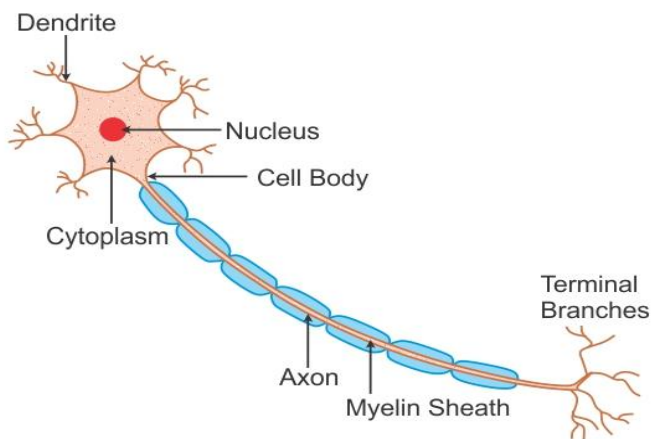


Fig. Human Nerve Cell

Function of the nerve cell:

The nerve cell receives and transfers messages, thereby helping to control and coordinate the working of different parts of the body.

3. Write short notes on the following.

- (a) Cytoplasm
- (b) Nucleus of a cell

Ans: (a) Cytoplasm

Cytoplasm is the jelly-like substance present between cell membrane and the nucleus. It contains various cell organelles like mitochondria, Golgi bodies, ribosomes, plastids, vacuoles, etc.

(c) Nucleus of a cell

Nucleus is a spherical structure located in the centre of the cell. It acts as the control centre of all the activities of the cell. It is surrounded by porous nuclear membrane which allows the movement of substances between the cytoplasm and inside of the nucleus. It contains a smaller spherical body called nucleolus and thread like structures called chromosomes. Chromosomes carry genes and help in the transfer of heredity characteristics from parents to offspring.

4. Which part of the cell contains organelles?

Ans.: Cytoplasm.

5. Make sketches of plant and animal cells. State three differences between them.

Ans:

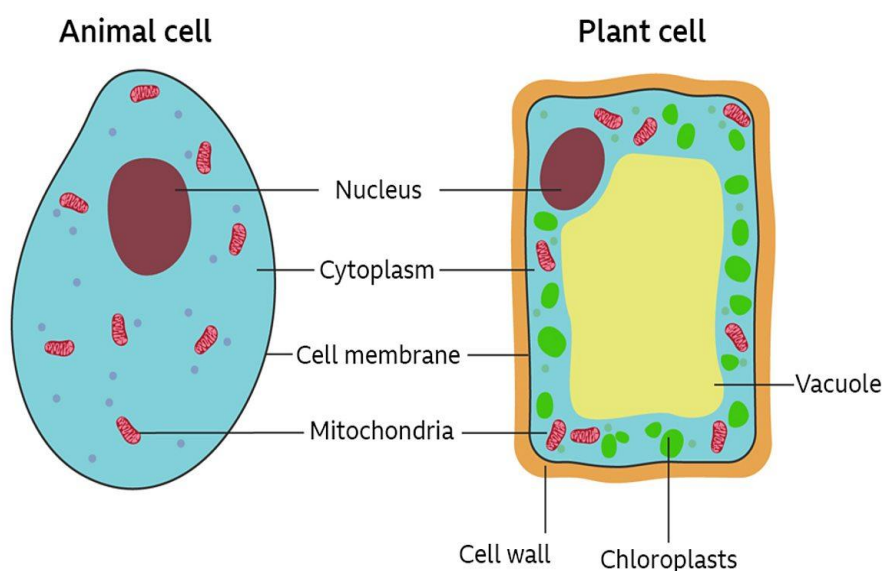


Fig. (a) Plant cell (b) Animal cell

Three differences between animal and plant cells are as follows:-

Sl. No.	Animal Cell	Plant Cell
1	Cell wall absent	Cell wall present
2	Plastids absent	Plastids present
3	Vacuoles small and many	Vacuoles single and large

6. State the differences between eukaryotes and prokaryotes.

Ans: The differences between the eukaryotes and the prokaryotes are as follows:-

Sl. No.	Eukaryotes	Prokaryotes
1	They are the organisms made of eukaryotic cells.	They are the organisms made of prokaryotic cells
2	The cells have well defined nucleus surrounded by nuclear membrane.	The cell do not have well defined nucleus. The nuclear material is not surrounded by nuclear membrane.
3	E.g., plants, animals, etc.	E.g., bacteria and blue green algae.

7. Where are chromosomes found in a cell? State their functions.

Ans: Chromosomes are found inside the nucleus of a cell.

Chromosomes carry genes and help in the inheritance of characters from parents to offspring.

8. 'Cells are the basic structural units of living organisms'. Explain.

Ans: Bricks are the smallest unit that assembled together to build the building. Like bricks, cell are the smallest unit that assembled together to make the body of every organisms. Cells grouped together to form tissue, a group of tissues forms an organ and many organs grouped together to form an organism. Therefore, cells are called the basic structural unit of living organisms.

9. Explain why chloroplasts are found only in plant cells?

Ans: Chloroplasts are found only in plant cells because they contain chlorophyll which gives green colour to the leaves and helps in photosynthesis.

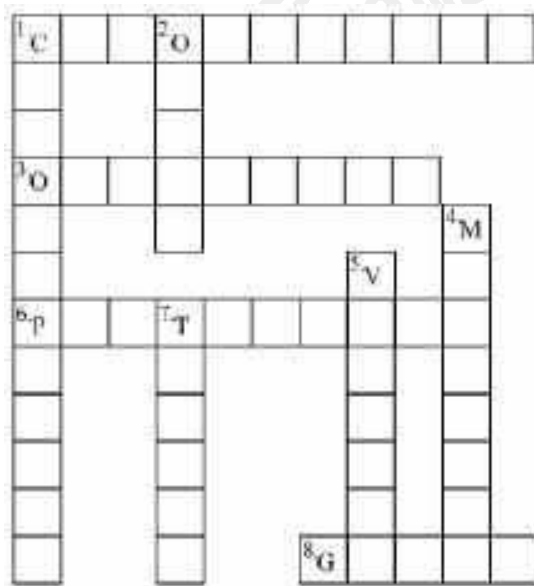
10. Complete the crossword with the help of clues given below.

**Across**

1. This is necessary for photosynthesis.
3. Term for component present in the cell.
6. The living substance in the cell.
8. Units of inheritance present on the chromosome.

**Down**

1. Green plastids.
2. Formed by the collection of tissues.
4. It separates the contents of the cell from the surrounding medium.
5. Empty structures in the cytoplasm.
7. A group of cells.



Ans: **Across**

1. Chlorophyll
3. Organelle
6. Protoplasm
8. Genes

**Down**

1. Chloroplasts
2. Organ
4. Membrane
5. Vacuole
7. Tissue



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### Extra Questions and Answers:

1. Match the organisms in Column A with their shapes in Column B.

A	B
(i) Red blood cells	(a) Branched
(ii) Muscle cells	(b) Irregular
(iii) Nerve cells	(c) Spherical
(iv) White blood cells	(d) Spindle shaped

Ans: (i) Red blood cells – (c) spherical  
(ii) Muscle cells – (d) Spindle shaped  
(iii) Nerve cells – (a) Branched  
(v) White blood cells – (b) Irregular  
(vi)

2. Define cell.

Ans: Cell is the basic structural and functional unit of life.

3. Name the largest cell.

Ans: The largest cell is the egg of an ostrich measuring 170mm X 130mm in size.

4. What are unicellular organisms? Give example.

Ans: Organisms which are made of only one cell are called unicellular organisms.

Ex. *Amoeba*, *Paramecium*, etc.

5. What are multicellular organisms? Give example.

Ans: Organisms which are made of more than one cell are called multicellular organisms.

Ex. Trees, elephant, etc.

6. Where are genes located in the cell?

Ans: Genes are located on the chromosomes of the nucleus in the cell.

7. What are pseudopodia? What are its functions?

Ans: Pseudopodia are finger like projections of varying length protruding out of *Amoeba*'s body.

The functions of pseudopodia are:-

1. They help in the movement of the organism.
2. They also help in capturing of food.

8. Draw a labeled diagram of human cheek cells.

Ans:

