# Cell: Structure and functions

**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)**

Answer:

(a) Unicellular organisms have one-celled body. (T)

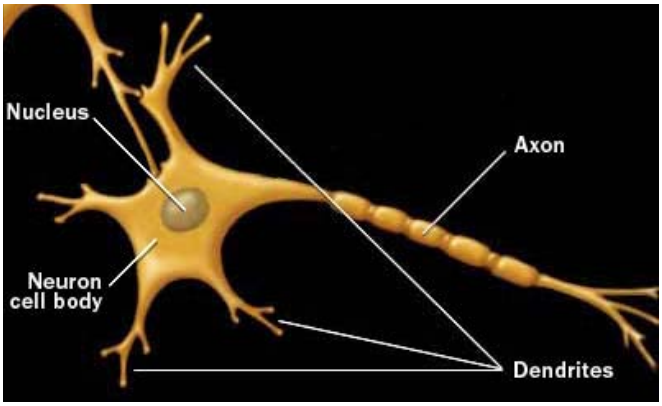
(b) Muscle cells are branched. (F)

(c) The basic living unit of an organism is an organ. (F)

(d) Amoeba has irregular shape. (T)

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

Answer:




The function of a nerve is to transmit messages to the brain and also take away messages from the brain to the receptor organs. Thus, it controls the working of different part of body.

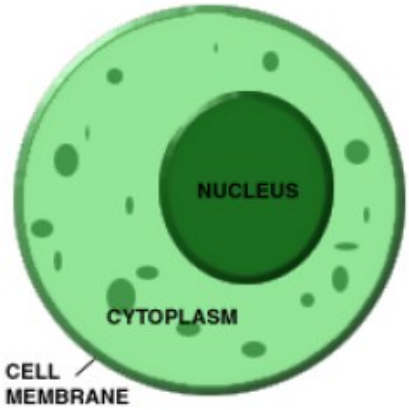
**3.Write short notes on the following:**

**(a) Cytoplasm**

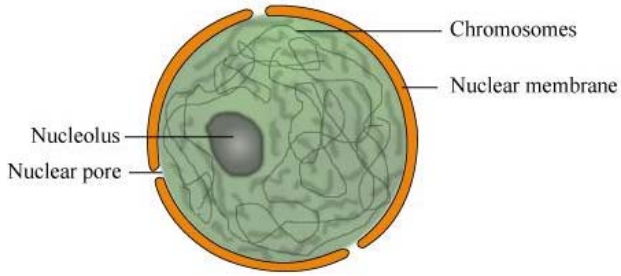
**(b) Nucleus of a cell**

Answer:

(a) Cytoplasm: It is a fluid that fills cell and occurs between the plasma membrane and the nucleus. Cell organelle such as mitochondria, ribosome, Golgi body etc suspend on it. It helps exchange of materials between the cell organelles.




(b)Nucleus of a cell: It is an important component of the living cell. It is generally spherical and located in the centre of the cell. The nucleus is composed of the following components:




(i) **Nuclear membrane:**It is a double-layered membrane which separates the contents of the nucleus from the cytoplasm. The nuclear membrane has nuclear pores that allow the transfer of specific substances in and out of the nucleus.

(ii) **Nucleolus:**

It is a small spherical body that is not bound by any membrane.

(iii) **Chromosomes:**

These are thread-like structures that carry genes. Genes contain information necessary for the transfer of characteristics from the parents to the offspring. Thus, chromosomes play an important role in the inheritance of characteristics.

4. **Which part of the cell contains organelles?**

**Answer:**

Cytoplasm is the part of the cell that contains various organelles such as mitochondria, ribosomes, Golgi bodies, etc.

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

| **Animal cells** | **Plant cells** |
|---|---|
| Animal cells enclosed by plasma membrane which is made up of proteins, fats | It enclosed by cell wall which is made up of cellulose or starch. |
| Chloroplast is absent | Chloroplast is present |
| Vacuoles are small . | Vacuoles are large, liquid-filled organelles found only in plant cells |
| | |

6. **State the difference between eukaryotes and prokaryotes.**

| **Prokaryotes** | **Eukaryotes** |
|---|---|
| It is unicellular mostly. | It is multicellular. |
| The nucleus is poorly defined due to the absence of a nuclear membrane. | The nucleus is well defined and is surrounded by a nuclear membrane. |
| Nucleolus is absent | Nucleolus is present. |
| Cell organelles such as plastids, mitochondria, golgi bodies, etc. are absent.<br>Example: Bacteria and blue-green algae | Cell organelles such as plastids, mitochondria, golgi bodies, etc. are present.<br>Example: Fungi, plant, and animal cells are eukaryotic cells |

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

Chromosomes found in a nucleus. It is a thread-like structure. Chromosomes play an important role in the inheritance of characters. They carry genes that help in the transfer of characters from the parents to the offspring.

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

Answer:

Cells constitute various components of plants and animals. A cell is the smallest unit of life and is capable of all living functions. Cells are the building blocks of life. This is the reason why cells are referred to as 'the basic structural and functional units of life'. All cells vary in their shapes, sizes, and activities they perform. In fact, the shape and size of the cell is related to the specific function it performs.

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

Chloroplasts are found only in plant cells. They contain a green pigment called chlorophyll. This green pigment is important for photosynthesis in green plants. This chlorophyll pigment traps solar energy and utilizes it to manufacture food for the plant.

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

Across

1.This is necessary for photosynthesis.

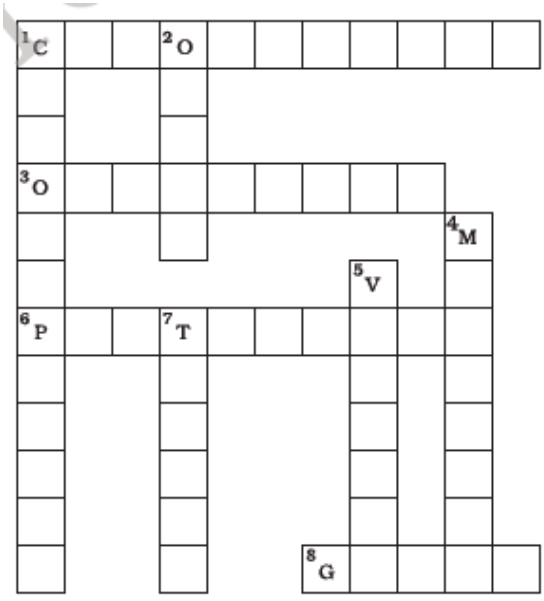
3.Term for component present in the cytoplasm.

6.The living substance in the cell.

8.Units of inheritance present on the chromosomes.

**Down**

1.Green plastids.



2.Formed by collection of tissues.

4.It separates the contents of the cell from the surrounding medium.

5.Empty structure in the cytoplasm.

7.A group of cells.

Answer:

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