

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

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

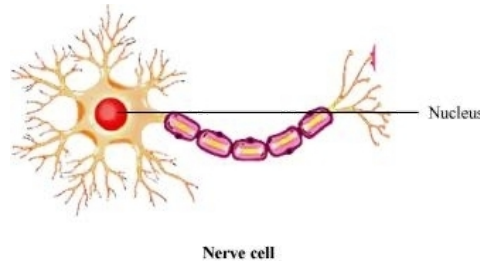
(b) Muscle cells are branched. (F)

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

(d) Amoeba has irregular shape. (T)

2. Sketch the human nerve cell. What function do nerve cells perform?

**Ans.**



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

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

**Ans.** The nucleus contains thread-like structures called chromosomes. 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.

4. Cells are the basic structural units of living organisms. Explain.

**Ans.** 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 are related to the specific function it performs.

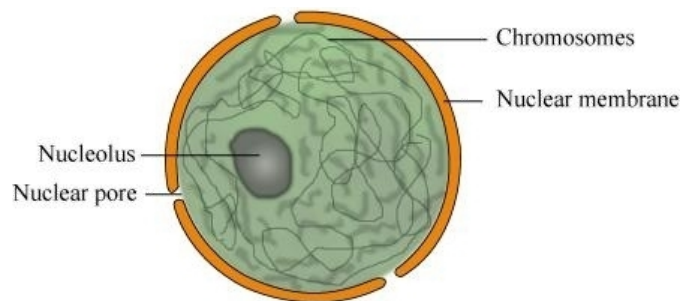
5. Write short notes on the following.

(a) Cytoplasm

(b) Nucleus of a cell

**Ans. (a) Cytoplasm.** It is a fluid that fills the cell and occurs between the plasma membrane and the nucleus. Cell organelles such as mitochondria, ribosomes, Golgi bodies, etc. are suspended in the cytoplasm. The cytoplasm helps in the exchange of materials between cell organelles.

**(b) Nucleus of a cell.** The nucleus is a spherical structure generally present at the center of a cell. The nucleus is composed of the following components.



(i) **Nuclear membrane.** It is a double-layered membrane that 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.

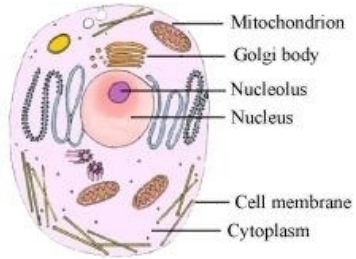
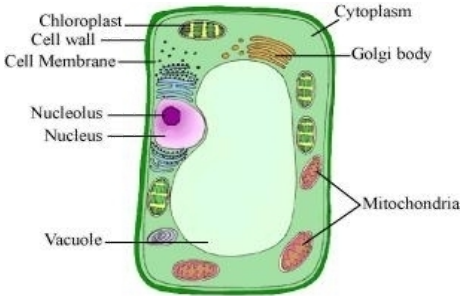
6. State the difference between eukaryotes and prokaryotes.

Ans.

Prokaryotes	Eukaryotes
Most prokaryotes are unicellular.	Most eukaryotes are 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.	Cell organelles such as plastids, mitochondria, golgi bodies, etc. are present.
Bacteria and blue-green algae are prokaryotic cells.	Fungi, plant, and animal cells are eukaryotic cells.

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

Ans.

Animal Cell	Plant Cell
 <p style="text-align: center;"><b>Animal cell</b></p>	 <p style="text-align: center;"><b>Plant cell</b></p>
They are generally small in size.	They are usually larger than animal cells.

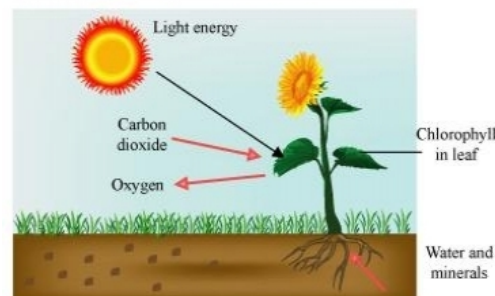
Cell wall is absent.	Cell wall is present.
Vacuoles are small in size.	Vacuoles are larger in size.
No other animal cell possesses plastids except for the protozoan Euglena.	Plastids are present.

8. Which part of the cell contains organelles?

**Ans.** The cytoplasm is the part of the cell that contains various organelles such as mitochondria, ribosomes, Golgi bodies, etc. The cytoplasm is a fluid that fills the cell and occurs between the plasma membrane and the nucleus.

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

**Ans.** 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.



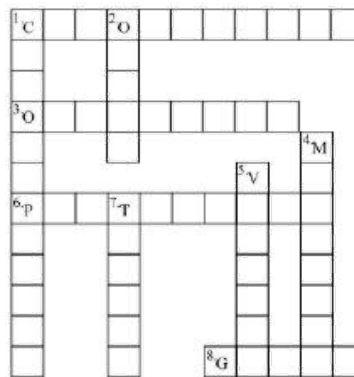
10. Complete the crossword with the help of the clues given below.

**Across**

- This is necessary for photosynthesis.
- Term for component present in the cytoplasm.
- The living substance in the cell.
- Units of inheritance present on the chromosomes.

**Down**

1. Green plastids.
2. Formed by a 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.



### Ans. Across

1. CHLOROPHYLL
3. ORGANELLE
6. PROTOPLASM
8. GENES

### Down

1. CHLOROPLASTS
2. ORGAN
4. MEMBRANE
5. VACUOLE
7. TISSUE

