

Ch. 1- Tissues

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A. Very Short Answer Questions:

- 1. Name the types of simple permanent tissues present in plants.**

Ans. In plants, the simple permanent tissues present are dermal tissue and ground tissue (parenchyma, collenchyma and sclerenchyma).

- 2. Name the tissue responsible for growth in the plants.**

Ans. The tissue responsible for growth in the plants is meristematic tissue.

- 3. Name two conducting tissues in plants.**

Ans. The two conducting tissues in plants are
1. Xylem 2. Phloem

- 4. What are the types of animal tissues?**

Ans. The four basic types of tissues present in animals are

1. Epithelial
2. Muscular
3. Connective
4. Nervous tissues

- 5. What is a neuron?**

Ans. The structural and functional unit of the nervous system is called a neuron.

- 6. Name the tissue that carries oxygen in the body.**

Ans. The tissue that carries oxygen in the body is blood.

- 7. Name the tissue that binds different tissues together.**

Ans. The tissue that binds different tissues together is connective tissue.

B. Short Answer Questions:

- 1. Give the location of the following tissues:**

- a) Cartilage
- b) Cardiac muscles
- c) Parenchyma
- d) Sclerenchyma
- e) Meristematic tissue

(Note: location can be more than one and you can add them too)

Ans. a) tip of the nose b) wall of the heart c) edible portions of a fruit d) distributed in stem, leaves and roots
e) tips of roots and shoots

- 2. What is the function of meristematic tissue?**

Ans. Meristematic tissues are those actively dividing cells that cause the growth of the plant body.

- 3. Write a short note on the cardiac muscles.**

Ans.

- Cardiac muscles are specialised muscles present only in the wall of the heart.

- These muscles are involuntary (not under our control). They keep on contracting and relaxing throughout the lifetime of an individual.
- This helps in the circulation of blood throughout the body.

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C. Long Answer Questions:

1. Write four characteristics of meristematic tissues.

Ans. The main characteristics of meristematic tissues are as follows:

1. The cells are small and closely packed with little or no intercellular spaces between them.
2. These cells have thin cell walls.
3. The cells are without vacuoles.
4. The cells actively divide to add new cells.

2. Write three functions of epithelial tissues.

Ans. The functions of epithelial tissues are

1. They cover the surface of the body and form the inner lining of internal organs.
2. The covering of the cells protects its inner parts from the entry of germs and mechanical damage.
3. These tissues are involved in secretion, selective absorption and sensation.

3. State three characteristics of smooth muscles.

Ans. The characteristics of smooth muscles are

1. They do not have striations and thus, are called smooth muscles.
2. These muscles are not under the control of an individual.
3. These are made up of spindle shaped cells with a nucleus located at the centre.

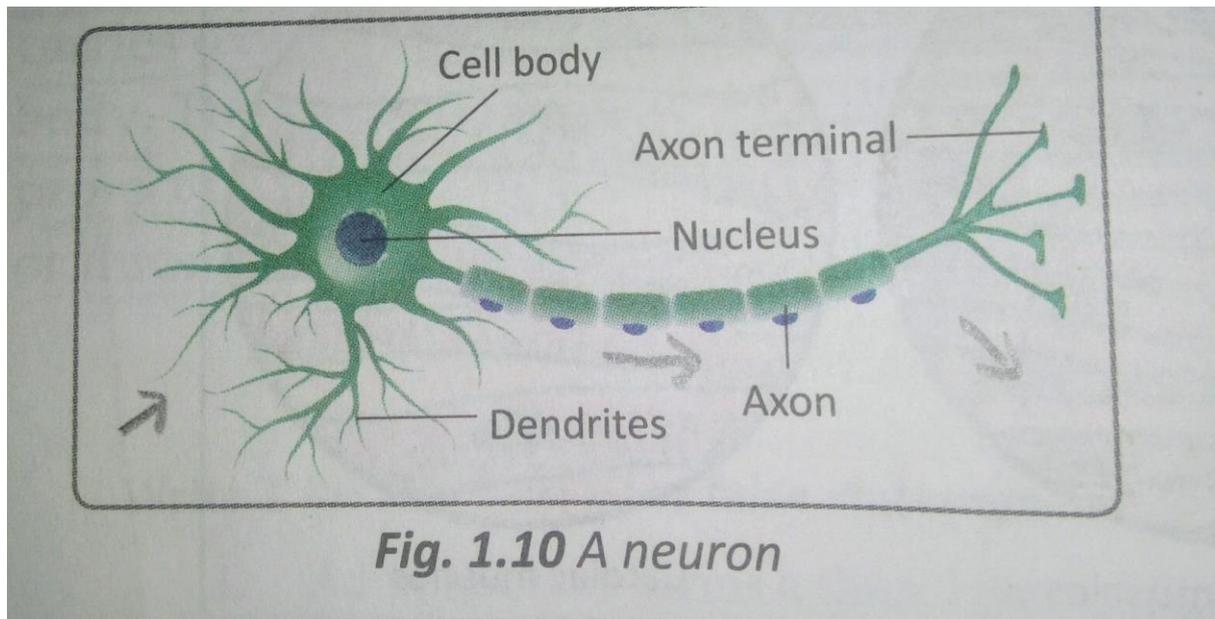
4. How is connective tissue different from other animal tissues?

Ans. Connective tissue connects different tissues of the body while other animal tissues like

- epithelial tissue forms the lining of various organs,
- muscular tissue is responsible for the movement of the body parts and
- nervous tissue conducts a message from one part of the body to the other.

5. Draw a labelled diagram of a neuron.

Ans.



D. Explain the following terms:

1. **Sclerenchyma:** Sclerenchyma are the thick-walled cells which provide mechanical strength to the plant. At maturity, most sclerenchyma cells are dead.
2. **Striated muscles:** Striated muscles are found attached to the skeleton and are also called skeletal muscles. These muscles are under the control of the will of an individual. They appear striped or striated due to the presence of light and dark bands.
3. **Adipose tissue:** It is composed of cells which store fat. This tissue also cushions and protects the internal organs from extreme cold and mechanical trauma.
4. **Collenchyma:** These are the living cells with a thick cell wall and are found just beneath the epidermis. They provide flexible support and elasticity to the leaf, stem and flower parts.
5. **Nerve tissue:** Nerve tissue or nervous tissue is the main component of the nervous system. This tissue regulates and controls body functions and activity. It has a basic unit called neuron which conducts messages from one part of the body to the other.

E. Differentiate between the following:

1. Meristematic and Permanent tissue

Ans.

- **Meristematic tissue** consists of actively dividing cells which cause the growth of the plant body.
- **Permanent tissue** consists of specialised cells that have lost the ability to divide and perform a particular function.

2. Bone and Cartilage

Ans.

- **Bone** is a hard connective tissue that provides a framework to support our body and help us to move. They also protect the soft internal organs such as the brain, heart and lungs.

- **Cartilage** is soft, elastic and flexible connective tissue that protects the bones from rubbing against each other. They provide flexibility, shape and support to ears and nose.

3. Parenchyma and Sclerenchyma

Ans.

- **Parenchyma tissue** is composed of living cells with thin cell walls.
- **Sclerenchyma tissue** is composed of cells which are dead at maturity. These cells have a thick wall.

4. Xylem and Phloem

Ans.

- **Xylem** is composed of thick walled tubular cells which transport water from roots to leaves (upward direction).
- **Phloem** is composed of thin walled tubular cells which transport food synthesized by the leaves to other parts of the plant (both upwards and downwards).

5. Blood and Lymph

Ans.

- **Blood** is a red coloured fluid that is present inside the blood vessels within our body. It has red blood cells (RBCs).
- **Lymph** is a clear, straw coloured fluid that flows in the lymph vessels throughout the body. Red blood cells are absent in lymph.