

Board – ICSE

Class – 9

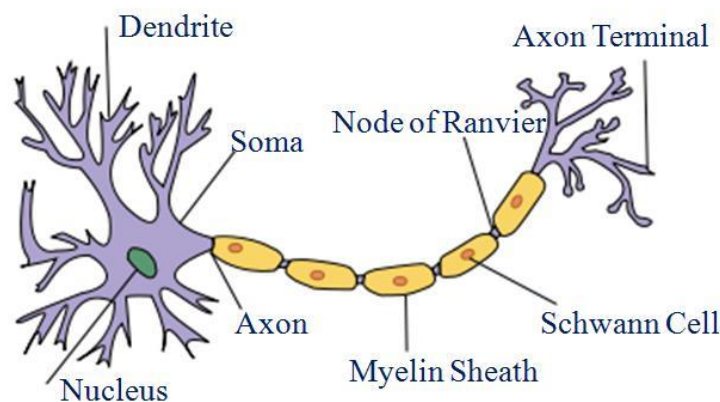
Topic – PLANT AND ANIMAL TISSUE

1. Name the tissue responsible for movement in our body.

Ans: 1. Muscular tissue, 2. Nervous tissue, combination of both the tissues are responsible for movement in our body.

2. What does a neuron look like?

Ans: A neuron consists of a cell body with a nucleus and cytoplasm, from which long thin hair like parts arise. Each neuron has a single long part called the axon, and many small, short branched parts called dendrite. An individual nerve cell is called neuron; it may be up to a metre long.



3. Give three features of cardiac muscles.

Ans: Feature of cardiac muscles

- (1) Heart muscles (cardiac muscles) are cylindrical, branched and uninucleated
- (2) They are striated muscle fibres.
- (3) They are involuntary muscles, cannot be controlled by us.

4. What are the Functions of areolar tissue?

Ans: Areolar tissue are connective tissues found in animal. It is found between skin and muscles, around blood vessels and nerves and in the bone marrow.

It fills the space inside the organs, supports internal organs and helps in the repair of tissues.

5. How are simple tissues different from complex tissues in plants?

Ans. **Simple tissues** are made up of one type of cells which coordinate to perform a common function.

Complex tissues are made up of more than one type of cells. All these coordinate to perform a common function.

6. Differentiate between parenchyma, collenchyma and sclerenchyma on the basis of their cell wall.

Ans. Parenchyma: The cells have thin cell walls made up of cellulose. **Collenchyma:** The cells have cell walls thickened at the corners due to pectin deposition.

Sclerenchyma: Their walls are thickened due to lignin deposition.

7. What are the functions of stomata?

Ans. The outermost layer of the cell is called epidermis and is very porous. These pores are called stomata. These stomata help in transpiration and exchange of gases.

8. Diagrammatically show the difference between the three types of muscle fibres.

Ans. Striated muscles

(1) They are connected to bones (Skeletal muscles).

(2) They are voluntary muscles.

(3) The cells are long, cylindrical with many nucleuses and are unbranched.

Smooth muscles

(1) They are found in alimentary canal and lungs.

(2) They are involuntary muscles.

(3) They are spindle in shape and have single nucleus.

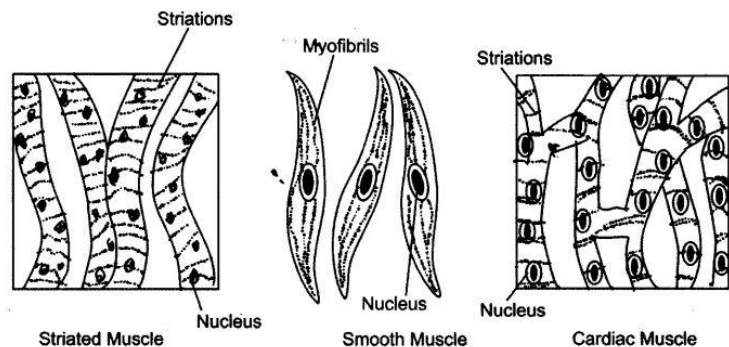
Cardiac muscles

(1) They are found in heart.

(2) They are involuntary in action.

(3) They are branched and have one nucleus.

8. Identify the type of tissue in the following: Skin, bark of tree, bone, lining of kidney tubule, vascular bundle.



Ans: (a) Skin—Striated squamous epithelium

(b) Bark of tree—Cork, protective tissue

(c) Bone—Connective tissue

(d) Lining of kidney tubule—Cuboidal epithelium tissue

(e) Vascular bundle—Conducting tissue

9. Give the functions of bone.

Ans: The functions of bone are:

(i) It provides shape to the body.

- (ii) It provides skeletal support to the body.
- (iii) It anchors the muscles.
- (iv) It protects the vital body organs like brain, lungs, etc.

10. What are the functions of areolar tissue?

Ans: Functions are:

- (i) It helps in repair of tissues after an injury.
- (ii) It also helps in combating foreign toxins.
- (iii) It fixes skin to underlying muscles.

11. Why does epidermal tissue have no intercellular space?

Ans: The epidermal (layer) tissue forms a protective outer covering for the plants and it protects the internal parts of the plant. It aid in the protection against loss of water, mechanical injury and invasion by parasitic fungi.

For this protective role to play the continuation of cells is necessary, hence it does not have intercellular space.

12. Name and give the function of each cell of xylem.

Ans. Xylem consists of tracheids, vessels, and xylem parenchyma and xylem fibres.

Tracheids and vessels—Allows the transport of water and minerals.

Xylem parenchyma—Stores food and helps in the sideways conduction of water.

Xylem fibres—Are supportive in function.

13. Name all different types of tissues present in animal.

Ans. There are four main types of tissues present in animal. ‘

- (a) Epithelial tissue present on the outer and inner lining of the body.
- (b) Muscular tissue are made up of muscles, help in movement.
- (c) Connective tissue connects the different organs in the body.
- (d) Nervous tissue consists of nerve cells and are present in the nervous system.

14. Name three types of muscle tissues and give function of each.

Three types of muscle tissues are:

(a) Striated muscle (b) Smooth muscle (c) Cardiac muscle

(a) **Striated muscle:** These muscles show alternate light and dark bands or striations.

They are involuntary and present in skeletal tissues, help in movement of body and bones.

(b) **Smooth muscle:** These are involuntary muscles; control the movement of food in alimentary canal, contraction and relaxation of blood vessels. Present in iris, uterus etc.

(c) **Cardiac muscle:** These muscles are present in heart, help in the rhythmic contraction and relaxation throughout the life.

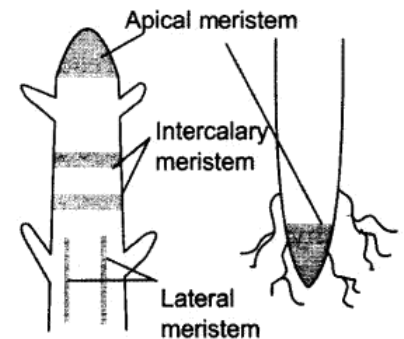
15. Name different types of meristematic tissue and draw diagram to show their location.

Ans: The 3 different types of meristematic tissue are:

(a) Apical meristem—Function: growth in length.

(b) Lateral meristem—Function: growth in thickness.

(c) Intercalary meristem—Function: growth in internodes.



Location of meristematic tissue

16. Describe 'epidermis' in plants.

Ans: Epidermis forms the entire **outermost layer** of the plant. It is made up of single cell layer. It protects all the internal parts of the plant.

On aerial parts, epidermis secretes **waxy, water-resistant layer** on their outer surface. This helps in protection against loss of water, mechanical injury and invasion of parasitic fungi.

In **leaves**, epidermis consists of small pores called **stomata**. These pores help in the transpiration and exchange of gases. In **roots**, epidermis has **long hair-like parts** that provide greater surface for water absorption.

In desert plants, epidermis has a thick waxy coating of cuticle which acts as a water proofing agent.

17. Explain the "complex tissue" of plants.

Ans: Complex tissues are made up of more than one type of cells. All these cells co-ordinate to perform common function. These are-xylem and phloem. Both are conducting tissues and form a vascular bundle. Xylem consists of-tracheids, vessels, xylem parenchyma and xylem fibres. Most of these cells are dead. Tracheids and vessels helps in water transportation, parenchyma stores

food and helps in the sideways conduction of water and fibres are mainly supportive in function.

Phloem is made up of four types of elements—sieve tubes, companion cells, phloem fibres and phloem parenchyma. It helps in the transportation of food in both the directions, i.e. from leaves to roots and to other parts of the plant.

18. Why is blood called connective tissue?

Ans: The blood is composed of cells and plasma. Plasma is a fluid and cells like red blood cells, white blood cells and platelets are present in it. All these cells are connected due to plasma. It also transports food, water to different parts of the body and connects them.

19. Explain the structure, function and location of nervous tissue.

Ans: Structure: Nervous tissue consists of cells called nerve cells joined end to end (neurons). A neuron (nerve cell) consists of a cell body with nucleus and cytoplasm. From these cell body a long thin hair-like parts arise called axon and many short branched parts called dendrites.

Location: Nervous tissue is present in brain, spinal cord and nerves. Function: Nervous tissue receives the stimuli and transmits the stimulus rapidly from one place to another within the body. The nerve impulse allows us to move our muscles and respond to any stimuli.