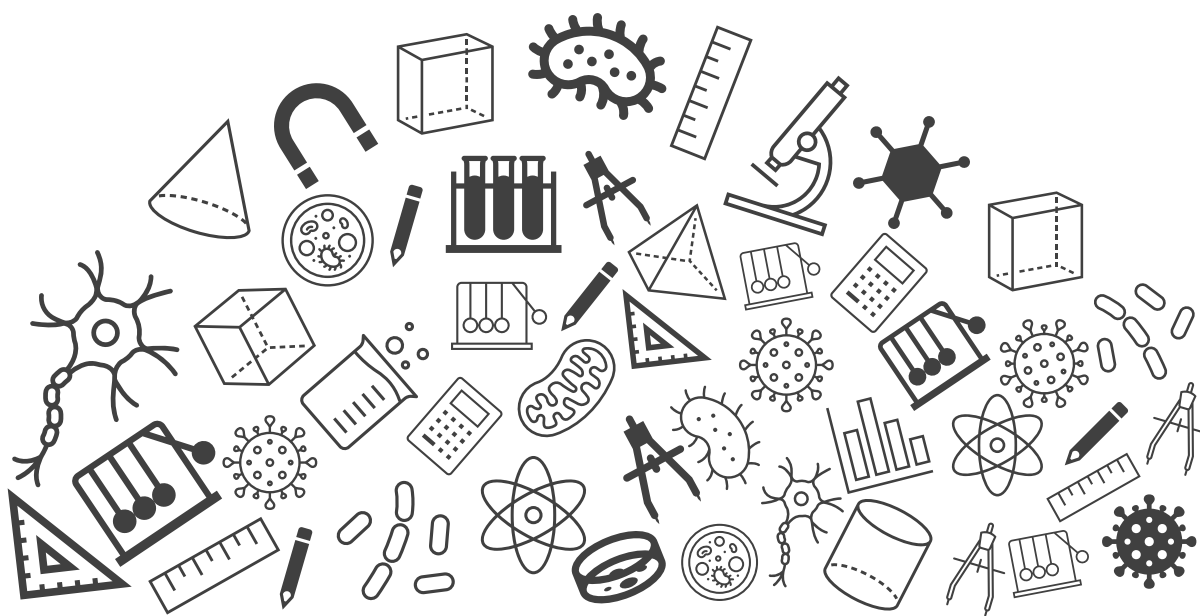




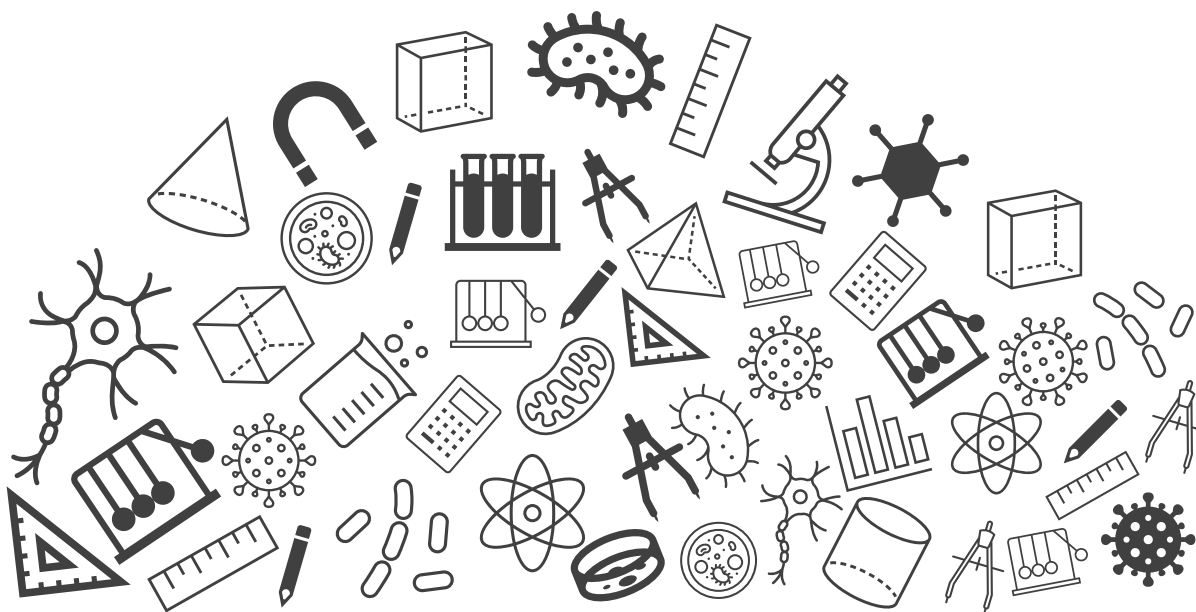
Grade 09

Science Chapter Notes





Tissues



Tissues

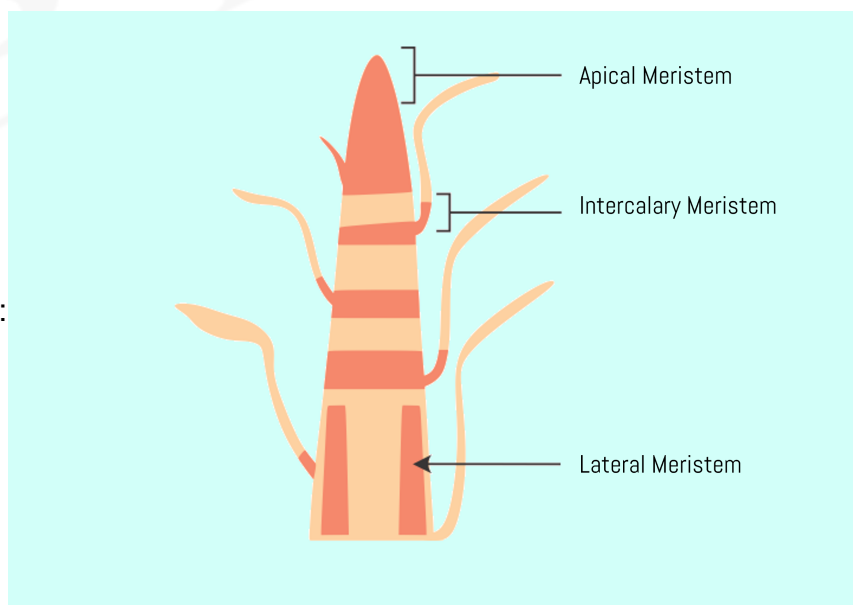
1. What is the role of epidermis? [3 Marks]

The epidermis performs the following important functions:

- It protects the plant against mechanical injury.
[1 Mark]
- It protects the plant from excess loss of water.
[1 Mark]
- It protects the plant from bacterial or fungal invasions.
[1 Mark]

2. Draw a neat labelled diagram of a plant and mark the following meristems:
 (a) Apical meristem
 (b) Lateral meristem
 (c) Intercalary meristem
 [3 Marks]

Solution:



[1.5 Marks for diagram and 0.5 Marks for each labelling]

Tissues

3. Difference between sclerenchyma and parenchyma tissue.

[5 Marks]

Parenchyma

[2.5 Marks]

The cells have thin cell wall.

The cells are alive.

They are block shaped.

Their primary function is to photosynthesise and storage.

These tissues are present in the newly divided parts of plants.

Sclerenchyma

[2.5 Marks]

The cells have very thick lignified cell wall.

The cells are dead at maturity.

They are elongated in shape.

Their primary function is to provide strength and support.

These tissues are present in the older parts of a plant or tree.

4. Write an essay on phloem. [2 Marks]

In vascular plants, phloem is the living tissue that transports the soluble organic compounds made during photosynthesis, in particular the sugar sucrose, to parts of the plant where needed. This transport process is called translocation.

[1 Mark]

Phloem tissue consists of cells which include sieve tubes, parenchyma cells, companion cells, phloem fibres, and sclereids.

[1 Mark]

Tissues

5. State 3 functions of epithelial tissues.

[3 Marks]

The three functions of epithelial tissues are:

- The cells of the epithelial tissue form the outer surface of the skin. This tissue protects the underlying cells from mechanical damage.

[1 Mark]

- These tissues help in absorption. For example, villi of the intestine are lined by these tissues that absorb digested food.

[1 Mark]

- These tissues help in secretion. For example, salivary glands that secrete saliva, are lined by these tissues.

[1

Mark]

6. Briefly describe glandular epithelium and give examples.

[2 Marks]

It is made up of some columnar or cuboidal cells that have been specialised for secretion. This specialised epithelial tissue sometimes folds inwards to form a multicellular gland. This is glandular epithelium. [1 Mark]

Examples: Salivary gland, and thyroid gland. [1 Mark]

7. How do muscles help in movement of the body?

[2 Marks]

The muscles in the human body work in pair, which means when one muscle contract and the other muscle relaxes.

[1 Mark]

In this way the skeleton remains to its original position, by push and pull movement of the muscle pair. A single muscle cannot push and pull simulataneously.

[1

Mark]

Tissues

8. What is a neuron? Mention its basic function. Draw a labelled diagram of a neuron.

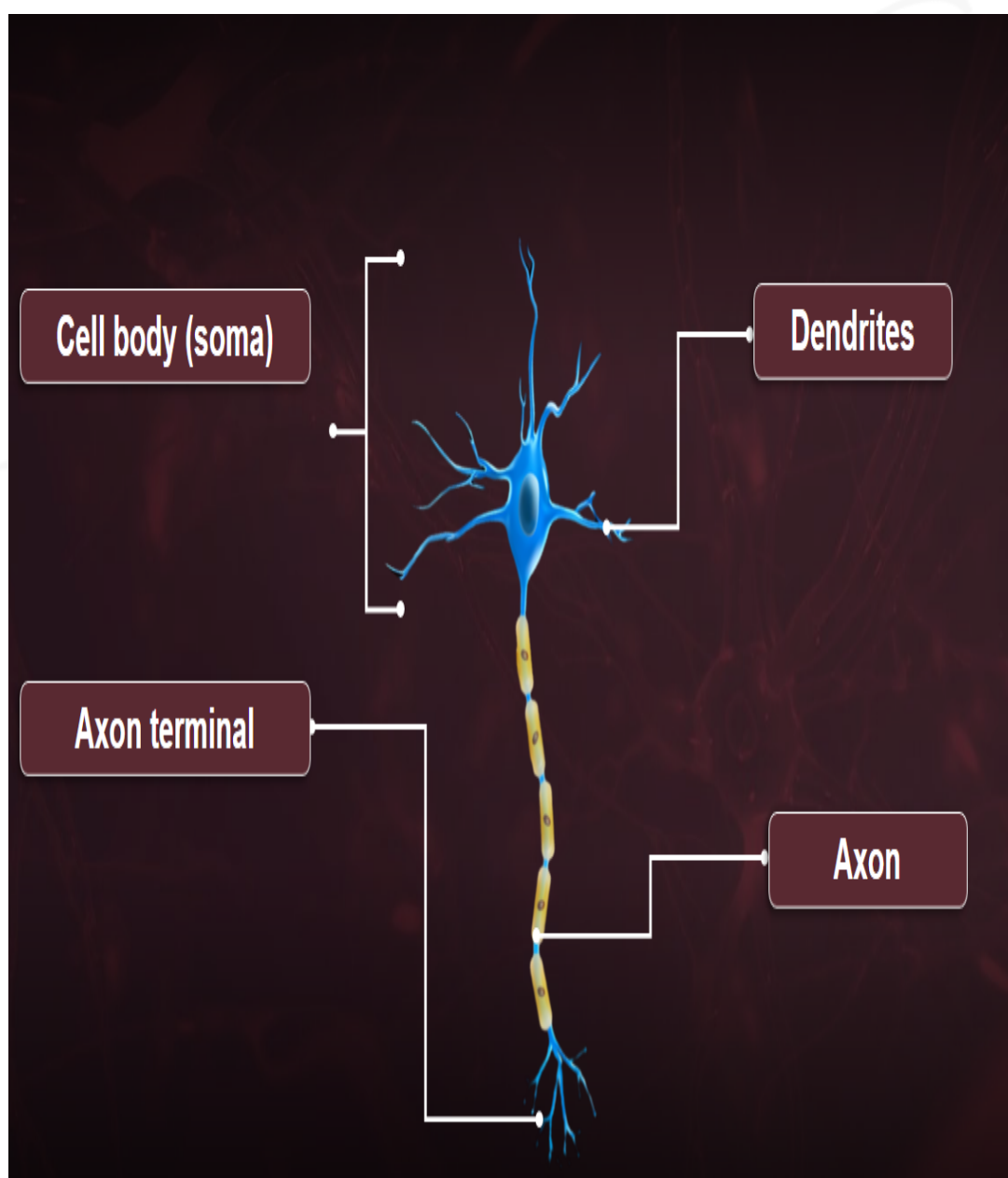
[5 Marks]

[Nervous Tissue]

Solution:

- Neuron is the structural and functional unit of the nervous system.
- The structure of a neuron is specially adapted to carry messages over large distances in the body in the form of electrical impulses or nerve impulses.

[2 Marks]



[3 Marks]

Tissues

9. Write the components of blood and give any two functions of blood.

[2 Marks]

Blood is a connective tissue which is composed of a fluid matrix called plasma in which red blood cells (RBCs), white blood cells (WBCs) and platelets are suspended. [1.5 Marks]

Blood flows and transports gases, digested food, hormones and waste materials to different parts of the body.

[Function - 0.5 Marks]

10. Differentiate bone and cartilage.

[3 Marks]

Bone	Cartilage
Bone is the hard connective tissue. [0.5 Marks]	Cartilage is the connective tissue which is flexible. [0.5 Marks]
Bone cells are embedded in a hard matrix that is composed of calcium and phosphorus compounds. [0.5 Marks]	The matrix of cartilage is not hard as bones matrix and are composed of proteins and sugars. [0.5 Marks]
Bones cannot be folded. [0.5 Marks]	Cartilage is foldable. [0.5 Marks]