

NCERT QUESTIONS WITH SOLUTIONS

1. Define the term “tissue”

Ans. Tissue is a group of related cells that have a common origin and perform a common function.

2. How many types of elements together make up the xylem tissue? Name them.

Ans. Xylem tissue is formed of four types of elements. They are tracheids, vessels, xylem parenchyma and xylem fibres.

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

Ans.

Difference between Simple and Complex Tissues	
Simple Tissues	Complex Tissue
A simple tissue is formed of only one type of cells.	A complex tissue is made of more than one type of cells.
All the cells perform the same function.	The different cells perform different functions.
There are three types of simple plant tissues- parenchyma, collenchyma and sclerenchyma.	There are two types of complex plant tissues – xylem and phloem.
They form primary structure of the plant.	They form transport system of the plant.

4. Differentiate amongst parenchyma, collenchyma and sclerenchyma on the basis of the cell wall.

Ans.

Parenchyma	Collenchyma	Sclerenchyma
The cell wall is thin.	It is thickened.	It is thickened.
Wall is formed of cellulose.	The thickening is of pectin present.	The thickening is generally of lignin.

5. What are the functions of stomata?

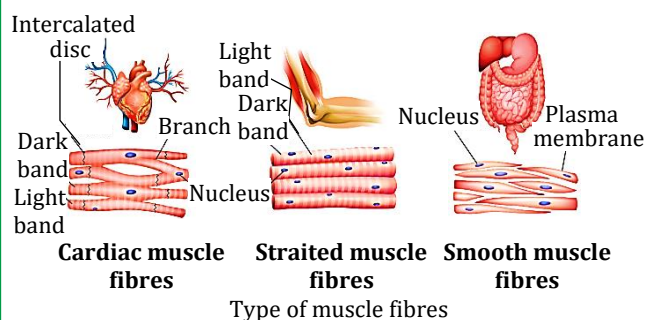
Ans. Functions of stomata.

(i) Gaseous exchange: Stomata are sites where exchange of gases (carbon dioxide and oxygen) occurs between the plant internal and external environment.

(ii) Transpiration: Major part of transpiration occurs through stomata. Transpiration removes excess water and keeps plant surfaces cool.

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

Ans.



7. What is the specific function of cardiac muscle?

Ans. Rhythmic contraction and relaxation simultaneously throughout life without getting fatigued.

8. Difference amongst striated, unstriated and cardiac muscles on the basis of their structure and site/location in the body.

Ans. Differences between Skeletal muscle tissue, Cardiac muscle tissue, Smooth muscle tissue –

(i) **Type of muscles :** Skeletal muscle

Location in Body: “Attached to bones of the skeleton. In the case of facial muscles, attached to other tissues including skin-hence also called as muscles of facial expression”.

Voluntary or Involuntary: Voluntary

Striations (alternate light and dark bands): Present, Striated muscle.

Cell Nuclei: Many nuclei (located at periphery of long cylindrical muscles fibre).

Cell Shape: Elongated cylindrical and unbranched.

(ii) **Type of muscles :** Cardiac muscle

Location in Body: Wall of the heart only.

Voluntary or Involuntary: Involuntary.

Striations (alternate light and dark bands): Present, Striated muscle.

Cell Nuclei: One (centrally located) nucleus.

Cell Shape: Cylindrical and branched.

(iii) **Type of muscles :** Smooth muscle.

Location in Body: Walls of hollow internal structures, including - Blood Vessels, Stomach, Intestines, Gall Bladder, Airways to the lungs, Iris of eye.

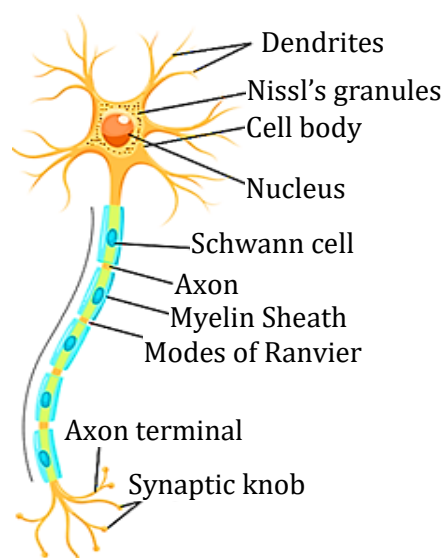
Voluntary or Involuntary: Involuntary

Striations (alternate light and dark bands): Absent, Nonstriated muscle.

Cell Nuclei: One (centrally located) nucleus.

Cell Shape: Spindle shaped and unbranched.

9. Draw a labelled diagram of a neuron.



Ans. Structure of Neuron

10. Name the following :

- (a) Tissue that forms the inner lining of our mouth.
- (b) Tissue that connects muscle to bone in humans.
- (c) Tissue that transports food in plants.
- (d) Tissue that stores fat in our body.
- (e) Connective tissue with a fluid matrix.
- (f) Tissue presents in the brain.

Ans. (a) Epithelial tissue
 (b) Tendon
 (c) Phloem
 (d) Adipose
 (e) Blood
 (f) Nervous tissue

11. Identify the types of tissue in the following: skin, bark of tree, bone, lining of kidney tubule, vascular bundle.

Ans. Skin: Epithelial tissue, connective tissue.

Bark of Tree: Cork (Protective tissue).

Bone: Connective tissue with solid matrix.

Lining of Kidney tubule: Epithelial tissue.

Vascular Bundle: Complex or vascular tissues, xylem and phloem.

12. Name the regions in which parenchyma tissue is present.

Ans. It occurs in almost all soft parts of the plants, and mesophyll of leaves. Aerenchyma in aquatic plants is also modified parenchyma. Epidermis is special type of parenchyma.

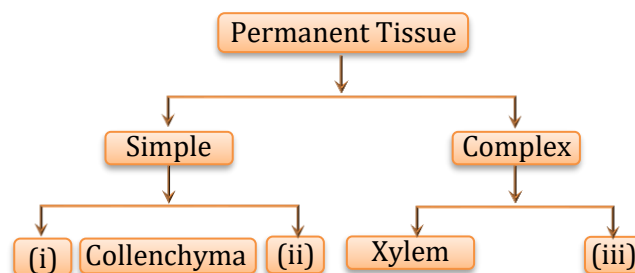
13. What is the role of epidermis in plants?

Ans. (i) Protection,
 (ii) Regulation of transpiration,
 (iii) Exchange of gases.

14. How does the cork act as a protective tissue?

Ans. Cork acts as a protective layer because its cells are dead, filled with tannins, resin and air, impermeable due to deposition of suberin in the cell walls and absence of intercellular spaces. It is insulating (heat proof), fire-proof, shock proof, waterproof and repellent to microbes and animals.

15. Complete the table:



Ans. (i) Parenchyma
 (ii) Sclerenchyma
 (iii) Phloem.