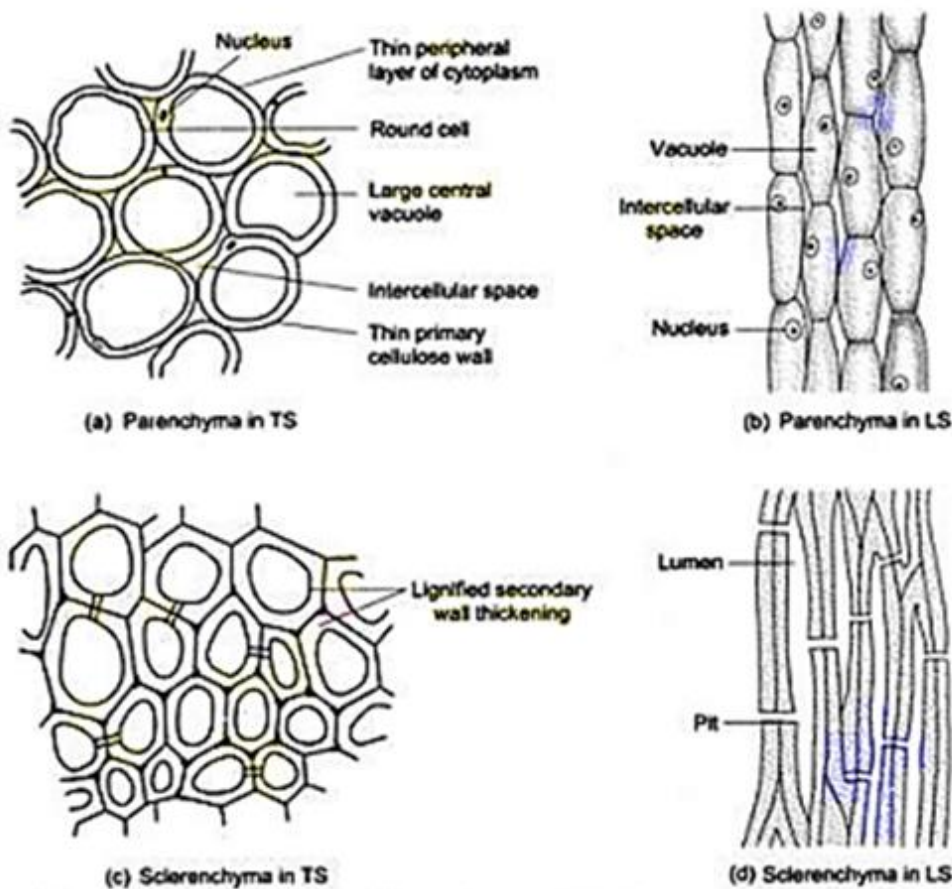


Chapter – 6 Tissues

Class 9 Science NCERT Textbook – Page 69

Q.1. What is a tissue?

Answer: Tissues are group of cells which are similar in structure and perform different functions.



Types of simple permanent tissues (a) Parenchyma cells in transverse section (b) Parenchyma cells in longitudinal section (c) Sclerenchyma cells in TS (d) Sclerenchyma cells in LS

Q.2. What is the utility of tissues in multi-cellular organisms?

Answer In multicellular organisms, cells form tissues. These tissues carry out different functions at different parts of the body. For example, the muscle cells have muscular tissues that helps in movement, nerve cells have nervous tissue which conduct messages.

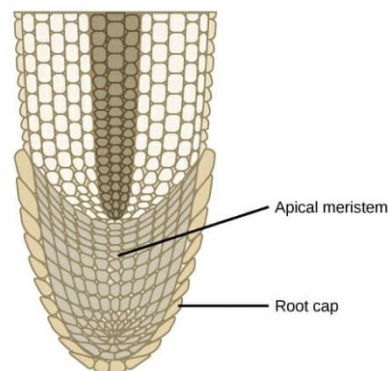
Class 9 Science NCERT Textbook – Page 73

Q.1 Name types of simple tissues?

Answer: The four types of simple tissues are parenchyma, collenchyma, sclerenchyma and aerenchyma.

Q.2 Where is apical meristem found?

Answer Apical meristems are existing on the tip of the root and stem, which help in the growth of the root and shoot. The different cell divisions and cellular development help in the growth of the stem and root.



Q.3 Which tissue makes up the husk of coconut?

Answer Sclerenchyma tissues makes up the husk of coconut.

Q.4 What are the constituents of phloem?

Answer Phloem tissue consist of conducting cells called sieve tube , parenchyma cells, companion cells or albuminous cells, fibres and sclereids.

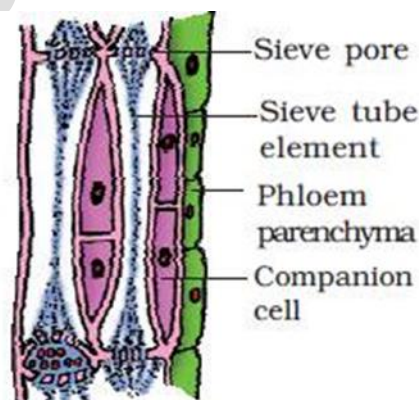


Figure 6.3 (b) Phloem tissues

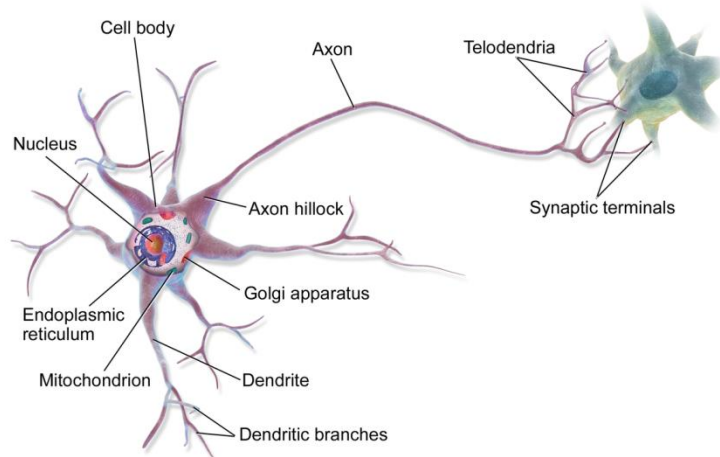
Class 9 Science NCERT Textbook – Page 77

Q.13 Name the tissue responsible for movement in our body.

Answer The tissue responsible for movement in our body is the muscular tissue that are elongated and are made of fibres of muscle cells.

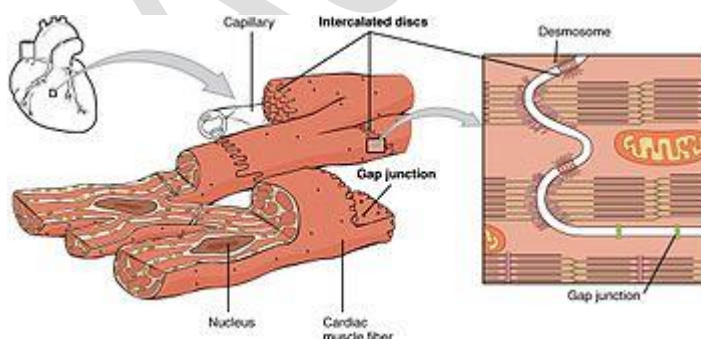
Q.14 What does a neuron look like?

Answer A neuron consist of cell body with cytoplasm and a nucleus from which have elongated hair-like structures. Neuron consists of axons with Synaptic terminals.



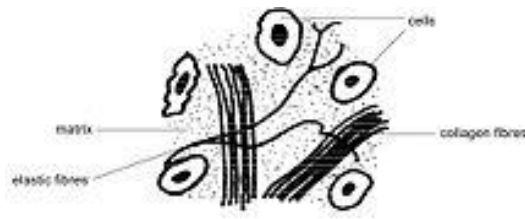
Q.15 Give three features of cardiac muscles.

Answer Cardiac muscles are involuntary muscles with rhythmic contraction and relaxation. Cardiomyocytes or the cardiac cells are uninucleate, tubular, and elongated. Cardiac muscles show weak cross-striations which do not get worn-out.



Q.16 What are the functions of areolar tissue?

Answer Areolar tissue support the internal organs, helps in tissue-repair of muscles and skin and act as a packaging tissue between the space inside the organs.



Class 9 Science NCERT Textbook – Page 78

Q1. Define the term “tissues”.

Answer:

A tissue is a collection or a group of similar or dissimilar cells which function together and particular work is done.

Q2. How many types of elements together make up the xylem tissue? Name them.

Answer:

Xylem is a complex tissue. Xylem tissue is made up of four different types of cells: -

- i) Tracheid's.
- ii) Vessels.
- iii) Xylem parenchyma.
- iv) Xylem fibers.

Q3. How are simple tissue different from complex tissue in plants?

Answer:

Simple tissue is made up of one type of cell and the complex tissues are made up of different types of cells.

Q4. Different between parenchyma, collenchyma and sclerenchyma on the basis of their cell wall.

Answer:

S/No.	Parenchyma	Collenchyma	Sclerenchyma
1.	Cell wall is primary.	Cell wall is primary	Cell wall is secondary.

2.	Cell wall is thin.	Cell wall has thickening of cellulose.	Cell wall is very thick destroying internal cellular space.
3.	Cell wall is made up of cellulose.	Cell wall is made up of cellulose.	Cell wall is thickened due to deposition of lignin.

Q5. What are the functions of the stomata?

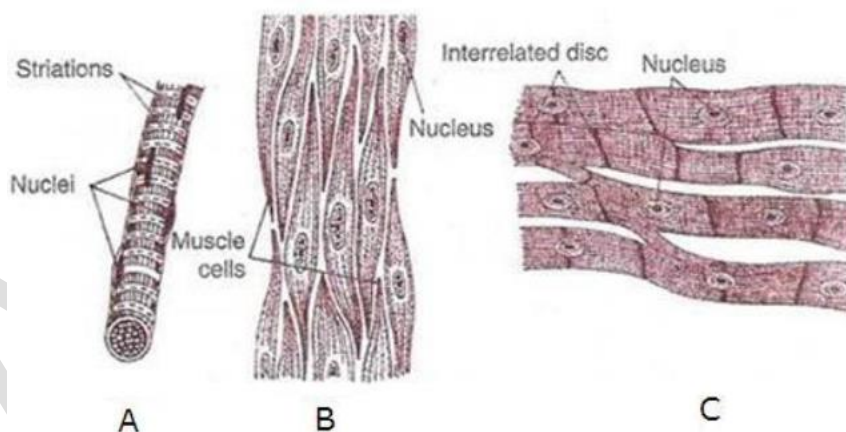
Answer:

The functions of stomata are: -

- i) It exchanges gases through tiny pores that is the intake of carbon dioxide and outgoing of oxygen.
- ii) It helps in the respiration of leaves through stomata.

Q6. Diagrammatically show the difference in three types of muscles fibers.

Answer:



- A - Striated muscle
- B - Smooth muscle
- C - Cardiac muscle

Muscle tissues are elongated and large-sized, so they are also called muscle fibers. On the basis of location, structure and function, they are of three types:

- i) Striated muscles.
- ii) Smooth muscles.
- iii) Cardiac muscles.

Functions of Striated muscles –

- Striated muscles are powerful and shows rapid contraction. These muscles get tired and need some rest.
- These muscles help in locomotion and all voluntary movements of the body.

Functions of Smooth muscles –

- Smooth muscles do not contract when we wish, so they are called involuntary muscles. For e.g.: Movement of food in the alimentary canal, opening and closing of tubes are involuntary movements.
- Smooth muscles contracts slowly but remain contracted for long time. So, these muscles cause the peristaltic movements in the tubes.
- In some organs, smooth muscles contract in the organ to produce extrusive movements as in the urinary bladder, the gall bladder and the uterus.

Function of Cardiac muscles –

- Cardiac muscles relax and contract rapidly, rhythmically and tirelessly.
- They contract endlessly from early embryonic stage till death.
- The contraction and relaxation of the heart muscles help to pump and distribute blood to different parts of body.

Q7. What is the specific function of the cardiac muscle?

Answer:

Cardiac muscle are muscle of heart. It contracts and relax rapidly continuously and rhythmically and never get fatigued.

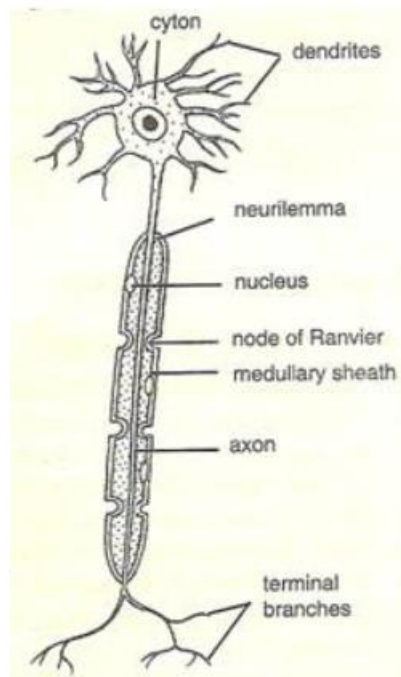
Q8. Difference between striated, unstriated and cardiac muscles on the basis of their structure and site/location in the body.

Answer:

S/No.	Striated muscle	Unstriated muscle	Cardiac muscle
1.	The striated muscle cells are long, cylindrical unbranched and multinucleated.	The unstriated muscle cells are long, pointed and uninucleate.	The cardiac muscle cells are cylindrical, branched and uninucleate.
2.	These muscles are in limbs and join the bones.	These muscles are in alimentary canal, blood vessels, iris of the eye, ureter and bronchi.	These muscles are in the wall of the heart.

Q9. Draw a labeled diagram of a neuron.

Answer:



Q10. Name the following:

- Tissue that forms inner lining of our month.**
- Tissue that connects muscle to bone in humans.**
- Tissue that connects muscle to bone in humans.**
- Tissue that connects muscle to bone in humans.**
- Connective tissue with a fluid matrix.**
- Tissue present in the brain.**

Answer:

- Squamous epithelium:** Tissue that forms inner lining of our month
- Tendon:** Tissue that connects muscle to bone in humans.
- Phloem:** Tissue that connects muscle to bone in humans.
- Adipose tissue:** Tissue that connects muscle to bone in humans.
- Vascular tissue (blood and lymph):** Connective tissue with a fluid matrix.
- Nervous tissue:** Tissue present in the brain.

Q11. Identify the type of tissue in the following: skin, bark of tree, bone, linin of kidney tubule, vascular bundle.

Answer:

- a) **Skin:** - Epithelial tissue (squamous epithelium).
- b) **Bark of tree:** Cork (protective tissue).
- c) **Bone:** Skeletal tissue (connective tissue).
- d) **Lining of kidney tubules:** Cuboidal epithelial tissue.
- e) **Vascular bundle:** Complex permanent tissue – xylem and phloem.

Q12. Name the regions in which parenchyma tissue is present.

Answer:

Parenchyma is a permanent tissue of angiosperm plants and is present in cortex, pith of stem, roots and in the mesophyll of leaves.

Q13. What is the role of epidermis in plants?

Answer:

Epidermis is a protective tissue of angiosperm plants. The role of epidermis are:

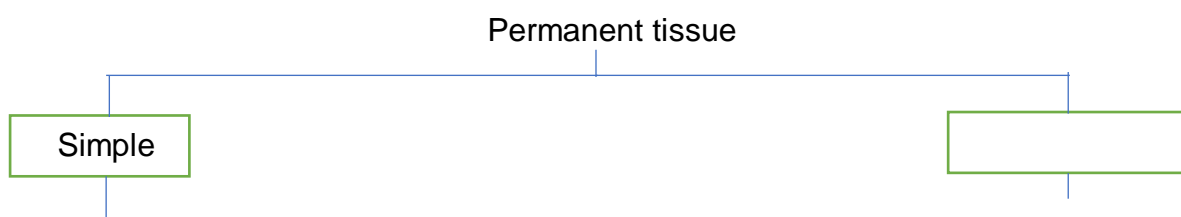
- i) It gives protection to tissue.
- ii) It forms outer covering of different plant organs such as roots, stem, leaves and flowers.
- iii) Epidermis helps in absorption, secretion, excretion, gaseous exchange and transpiration.
- iv) It helps in preventing the attack of pathogens.

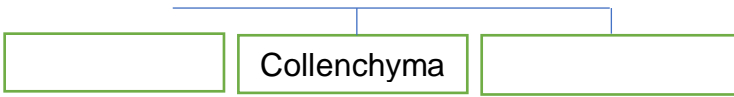
Q14. How does cork act as a protective tissue?

Answer:

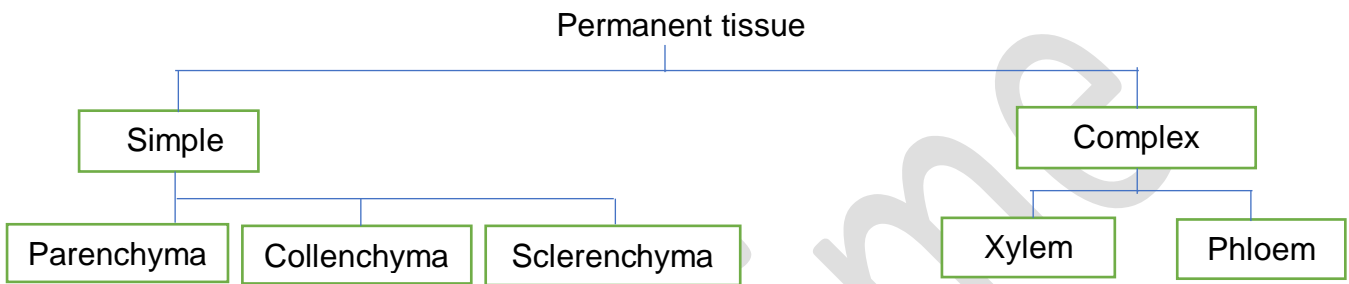
The cork cells are dead and they do not have intercellular spaces. The cell walls of the cork cells have suberin which makes the cells impermeable to water and gases. Cork protects tissues from dehydration, infection and mechanical injury.

Q15. Complete the table:





Answer:



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