Chapter-6
Tissues

EXERCISE-6.1
1 mark

1. What is a tissue?

Ans. It is a group of cells similar in origin and structure and they are specialized to perform a particular function like muscle cells in our body form the muscle tissue that bring about body movements specific function.

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

Ans. There is a clear cut division of labour in multicellular organisms i.e. different parts of the body of a multicellular organism perform specific functions. For example, brain controls all other parts of body, heart pumps blood to all parts of body, kidneys remove waste materials from body, sense organs collect information from external sources for sensory perception etc. All these functions would never be possible without formation of tissues in multicellular organisms.

3. Name types of simple tissues.

Ans. The simple tissues found in plants are of following three types:
i parenchyma
ii collenchymas
iii Sclerenchyma

4. Where is apical meristem found?

Ans. The apical meristem is found at the apex growing tips of the stem and roots.
3. Which tissue makes up the husk of coconut?

Ans. Sclerenchymatous tissue.

5. What are the constituents of phloem?

Ans. The constituents of phloem are: sieve tubes, companion cells, phloem parenchyma, phloem fibres bast.

EXERCISE-6.2
2 mark

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

Ans. Muscle/muscular tissue.

2. What does a neuron look like?

Ans. A neuron comprises of a cell body cyton along with one or more short branchesDendron and one hair like long branch axon.

3. Give three features of cardiac muscles.

Ans. v Cardiac muscles are involuntary i.e. they don't work under our will.
i. Its cells are cylindrical, branched, striated and uninucleate.
ii. It shows rhythmic contraction and relaxation throughout the person's life.

4. What are the functions of areolar tissue?

Ans. Areolar tissue is a kind of filler tissue found between skin and muscles, around our blood vessels and nerve cells and also in the bone marrow. Its functions are therefore
i To fill the space inside organs.
ii To help in repair and maintenance of nearby tissues/organs.
iii To support and prevent injuries to internal organs.

5. Define the term "tissue".

Ans. It is a group of cells similar in origin and structure and they are specialized to perform a particular function like muscle cells in our body form the muscle tissue that bring about body movementsspecific function.

EXERCISE-6.3
4 mark

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

Ans.

Simple tissue	Complex tissue
i) It is made up of only one type of cells. ii) All cells of this tissue work as individual units to perform a particular function. Eg. parenchyma, collenchyma and sclerenchyma tissues.	i) It is made up of more than one type of cells. ii) Cells of this tissue work together as one single unit to bring about a particular function. Eg. xylem and phloem tissues.

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

Ans.

Parenchyma	Collenchyma	Sclerenchyma
Cell wall is thin and made up of cellulose.	Cell wall is irregularly thickened at corners due to deposition of pectin.	Cell wall is very thick due to deposition of impermeable substance lignin.

3. What are the functions of the stomata?

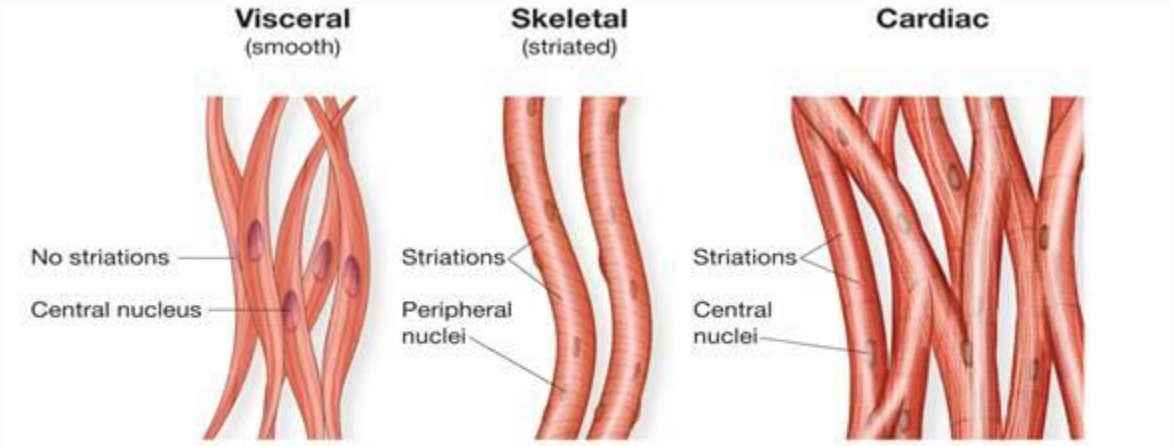
Ans. The functions of stomata are:

i gaseous exchange like exchange of $CO_2 and\ O_2$.

ii Process of transpiration i.e. loss of excess water in the form of water vapour occurs through stomata.

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

Ans.



	Visceral (smooth)	Skeletal (striated)	Cardiac
Contracts	Slowly	Rapidly	Rapidly
Found	Viscera, blood vessels	Trunk, extremities, head and neck	Heart
Control	Involuntary	Voluntary	Involuntary

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

Ans. Cardiac muscles are the muscles of heart that pumps blood to all parts of body and the pumping needs rhythmic contraction and relaxation of cardiac muscles throughout the life without any fatigue.

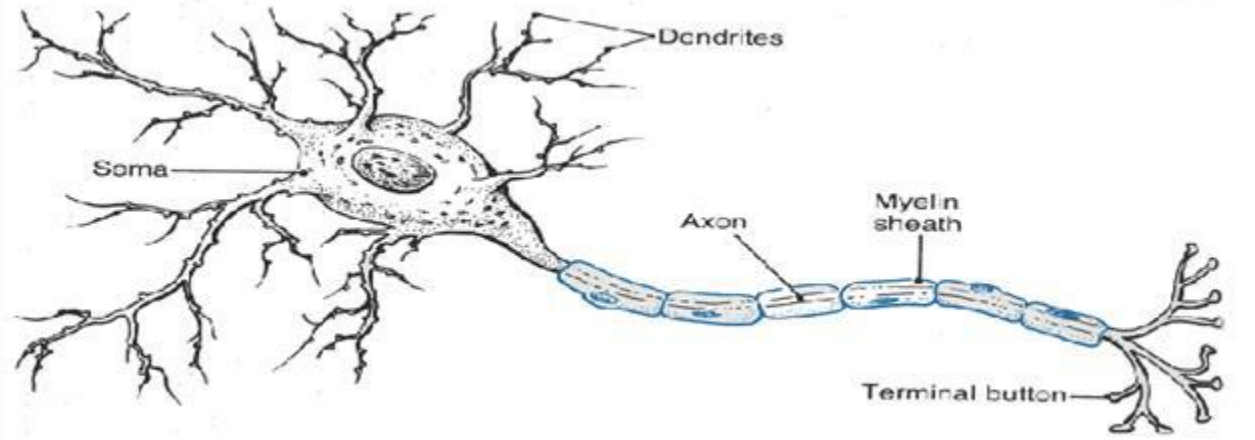
6. Differentiate between striated, unstriated and cardiac muscles on the basis of their structure and site/location in the body.

Ans.

Striated muscle	Unstriated muscle	Cardiac muscle
They show light and dark bands (striations) when we stain them. Their cells are elongated and cylindrical also unbranched. Cells are multinucleate.	They don't show any striations on staining. Their cells are long but spindle shaped and unbranched. Cells are uninucleate.	They show striations on staining. Their cells re cylindrical and branched. Cells are uninucleate.
They are responsible to bring about voluntary movements (like tongue, limbs etc)	They are involuntary in action (walls of tubular organs, blood vessels etc)	They are again involuntary in their function (contraction and relaxation of heart)

7. Draw a labelled diagram of a neuron.

Ans.



EXERCISE-6.4
Frequently Asked Questions

1. 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 present in the brain.
Ans. a epithelial tissue
b tendons
c phloem
d adipose tissue
e blood
f nerve tissue

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

Ans.

Skin	**Epithelial tissue**
Bark of tree	Sclerenchymatous tissue
Bone	Connective tissue
Lining of kidney tubule	Cuboidal epithelial tissue
Vascular bundle	Complex permanent tissue

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

Ans. Parenchymatous tissue is present in the epidermis, cortex, pith of the stem, root, leaves, flowers and fruits of plants.

4. What is the role of epidermis in plants?

Ans. It is a protective layer to the plant parts. It can also absorb water from soil like in the roots and even allow exchange of gases through stomata.

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

Ans. In plants the secondary meristem cuts off many external layers of cells that are dead and arranged in a compact manner. Such layers together make cork. They have deposition of suberin which is very hard and impermeable hence protects plants from unfavorable conditions and microbial attack etc.