Chapter 6

TISSUES

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1. What is a tissue?

Ans Tissue is a group of cells that are similar in structure and work together to achieve a particular function.

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

Ans In multi-cellular organisms there are many cells and a particular function is carried out by a group of cells. So, the cells perform the function very efficiently. Such a group of cells is called a tissue. eg., in plants, vascular tissues conduct food and water from one part to other. Different types of tissues perform different functions. So, there is a division of labour in multi-cellular organisms.

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1. Name types of simple tissues.

Ans Parenchyma, Collenchyma, Sclerenchyma

2. Where is apical meristem found?

Ans Apical meristem is found at the growing tips of stems and roots.

3. Which tissue makes up the husk of coconut?

Ans Sclerenchyma.

4. What are the constituents of phloem?

Ans The constituents of phloem are :-

Sieve tubes
Companion cells
Phloem fibres
Phloem parenchyma.

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

Ans Muscular tissue.

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. Usually each neuron has a single long part (process)

called the axon and many short branched parts (processes) called dendrites.

3. Give three features of cardiac muscles.

Ans Three features of cardiac muscles are -

i) Cardiac muscles show rhythmic contraction and relaxation throughout life.

ii) Cardiac muscles are involuntary muscles

iii) Cardiac muscles cells are cylindrical, branched and uninucleate.

4. What are the functions of areolar tissue?

Ans Areolar tissue fills the space inside the organs, supports internal organs and helps in repair of tissues.

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

Ans Xylem is made up of four types of elements :-

Tracheids.
Vessels
Xylem parenchyma
Xylem fibres

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

Ans Simple tissues in plants are made of one type of cells whereas complex tissues in plants are made of more than one type of cells.

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

Ans Difference on the basis of cell wall

Parenchyma	Collenchyma	Sclerenchyma
Consists of living cells and the cells have thin cell walls	cells are living and have irregularly thickened cell walls.	cells are dead and have thick cell walls (The walls are thickened due to lignin)

5. What are the functions of the stomata?

Ans Functions of the stomata are :-

i) It allows exchange of gases with the atmosphere.

ii) Transpiration (loss of water in the form of water vapour) takes place through stomata.

7. What is the specific function of cardiac muscle?

Any Cardiac muscles performs rhythmic contraction and relaxation throughout life to help the heart to pump blood to various parts of body.

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

Any	Striated muscles	Unstriated muscles	Cardiac muscles
Structure-	Cells are long, cylindrical, unbranched, multinucleate	Cells are long with pointed ends (spindle shaped) and uninucleate	Cells are cylindrical, branched and uninucleate.
	have alternate light and dark bands or striations	lack striations	have striations
location-	They are mostly attached to bones as in the limbs	These muscles are present in the walls of alimentary canal, blood vessels, in the iris of the eye, in ureters, in the bronchi of the lungs.	occur in the walls of heart.

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

Ans Parenchyma is present in the stem and root (cortex), in leaves (between upper and lower epidermis), in xylem and phloem etc.

13. What is the role of epidermis in plants.

Ans (1) The entire surface of a plant has an outer covering epidermis.
(2) It protects all the parts of the plant.
(3) On the aerial parts of plant, epidermal cells secrete a water resistant layer on their outer surface. Epidermis along with this protects the inner cells against loss of water, mechanical injury and invasion by parasitic fungi.
(4) Stomata in epidermis of the leaves are necessary for exchanging gases with the atmosphere and transpiration.
(5) Epidermal cells of the roots bear hair like structure which help in water absorption.

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

Ans Cork act as a protective tissue.
(1) The cells of cork are dead and compactly arranged without intercellular spaces.
(2) Cork Cells have a substance called suberin in their walls that makes them impermeable to gases and water. Cork protects the inner tissues against the loss of water.