Extra Question Answer

Question 1.
Explain how the bark of a tree is formed. How does it act as a protective tissue?
Answer:
In the older stem, a strip of secondary meristem replaces the epidermis. The secondary meristem cuts off cells towards outside to form a several-layer thick tissue; This is called the cork or the bark of the tree.

Cells of cork or bark are dead, compactly arranged without intercellular spaces and have a chemical called suberin in their walls that makes them impervious to gases and water. In this way it acts as a protective tissue.

Question 2.
Draw a diagrammatic labelled sketch of stem tip to show location of meristematic tissue. Mention the functions of different types of meristematic tissue.
Answer:

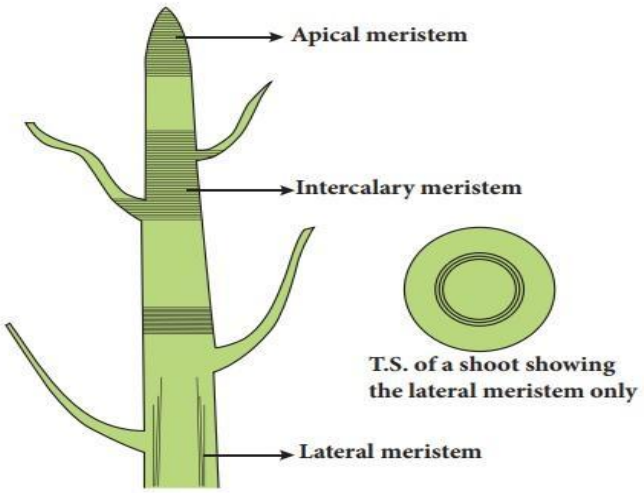


Figure 7.1 Longitudinal section of shoot apex showing location of meristems and young leaves.

The types of meristematic tissue are:
(i) Apical meristem: It is present at the growing tips of stems and roots and results in increase in the length of the stem and the root.

(ii) Lateral meristem (cambium): It is present on the lateral sides of stems and roots. It helps to increase the girth of the stem or root.

(iii) Intercalary meristem: It is present at the base of the leaves or internodes. It helps in the longitudinal growth of plants.

Question 3.

What are the two main components of blood? Why is blood considered a type of connective tissue?

Answer:

Blood is a special connective tissue consisting of a fluid matrix, plasma, and formed elements. The formed elements are red blood cells (RBCs), white blood cells (WBCs) and blood platelets. Blood is considered as a type of connective tissue as they have

the same origin as other types of connective tissue and helps to connect the different parts of the body to facilitate exchange of various components like nutrients and gases.

Question 4.
Give one function of each of the following.
(I Stomata
(ii) Root nodules
(iii) Cardiac muscle fibers
Answer:
(i) Stomata: Help in exchange of gases in the plants.

(ii) Root nodules: In leguminous plants, the root nodules harbor nitrogen fixing bacteria which convert atmospheric nitrogen into nitrates.

(iii) Cardiac muscle fibers: They help in rhythmic contraction and relaxation of the heart.

Question 5.
Differentiate between bone and cartilage.

Or

Differentiate between bone and cartilage with respect to structure, function and location.
Answer:

Bone	Cartilage
Bone is strong and nonflexible connective tissue.	Cartilages are flexible connective tissue .
It has hard matrix made of proteins, calcium and phosphorus.	Matrix is made of proteins and sugars.
It cannot be bend.	It can be bend.
Blood vessels are present.	Blood vessels are absent.
Canaliculi connections are present between bone cells, osteocyte.	Canaliculi connections are absent betweenchondrocytes.
It provides shape and skeletal support to the body.	It provide support and flexibility to the body and also smoothen bone surfaces at joints.
It forms skeleton.	It is found in nose, ear , tracheaand larynx.

Question 6.

Explain the basic criteria for classification of permanent tissue in plants.

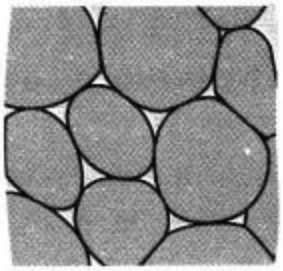
Answer:

The permanent tissues are classified on the basis of the following criteria:

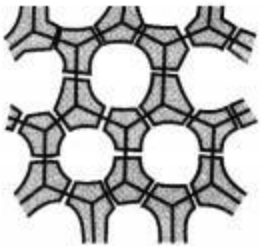
1. Simple (made of one type of cell) or complex (made of more than one type of cells)
2. Cell wall: Thin or thick
3. Type of cell: living or dead
4. Type of function the tissue performs: epidermis is protective, parenchyma is packing or supportive tissue and sclerenchyma makes up conducting tissue.

Question 7.

Identify the given two slides A and B as a parenchyma or sclerenchyma. Sclerenchyma can be identified by which characteristic?



Slide A



Slide B

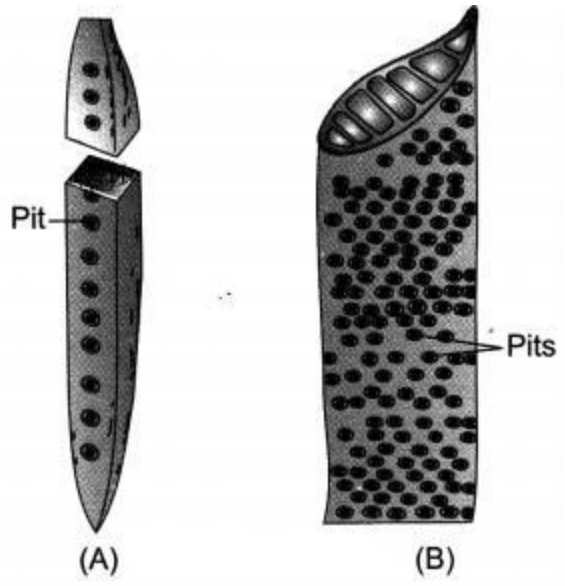
Answer:

Slide A is parenchyma and Slide B is sclerenchyma.

Sclerenchyma can be identified by the type of cells which are long and narrow as the walls are thickened due to presence of lignin.

Question 8.

(i) Identify the given figures.



(ii) Give any two major differences between the structures identified.

(iii) Describe the role performed by these two in the plant body.

Answer:

(i) Structure (A) is a tracheid and structure (B) is a vessel.

(ii) Tracheid:

- Tracheid's are elongated or tube-like cells with thick and lignified walls and tapering ends.
- They are in the form of single cells.

Vessel:

- Vessel is a long cylindrical tube-like structure made up of many cells called vessel members.

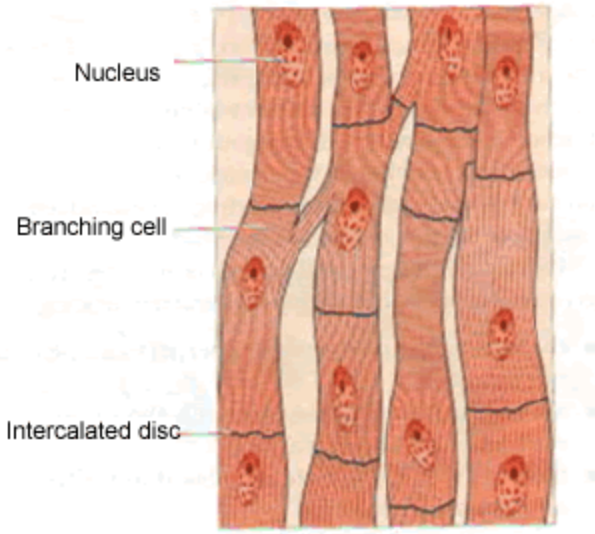
- They are composed of a number of cells fused together.

(iii) Tracheid's and vessels help in vertical transport of water and minerals in the plants. They also help to provide mechanical strength to the plants.

Question 9.

Draw a well labelled diagram of cardiac muscle found in the human body. Write two differences between striated and smooth muscles.

Answer:

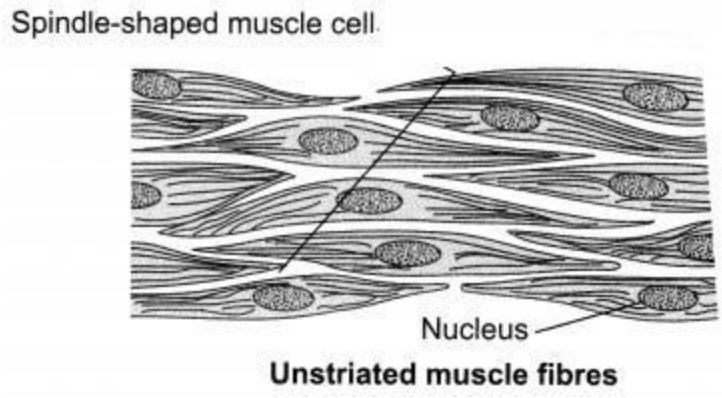


Name of the Muscle	Striated Muscles	Unstriated Muscles
Structure	They are long, cylindrical and unbranched.	The cells are long and spindle-shaped.
Site/Location	They are present in our limbs.	They are present in iris of the eye, ureters, blood vessels, alimentary canal and bronchi of lungs.
Mode of contraction	Voluntary in nature as they act as per our will.	Involuntary in nature as they are not under control of our will.
Number of nuclei	They are multinucleate.	They are uninucleate.
Striations	They are striated as they have alternate light and dark bands.	They do not have striations.

Question 10.

Draw a labelled diagram of unstriated muscle tissue and mention its occurrence, features and functions.

Answer:



Unstriated muscle fibres

(i) The cells are long and spindle-shaped.
(ii) They do not have striations.
(iii) Involuntary in nature as they are not under control of our will.
(iv) The cells of smooth muscles are uninucleate.
(v) Smooth muscle fibers are present in iris of the eye, ureters, blood vessels, alimentary canal and bronchi of lungs.

Question 11.

Name the kinds of muscles found in your limbs and lungs. How do they differ from each other structurally and functionally?

Answer:

Striated muscle fibers are found in limbs whereas smooth muscle fibers are present in lungs. The differences in their structure are:
(i) Striated muscle fibers have alternate light and dark bands which are not present in the smooth muscle fibers.

(ii) Striated muscle fibers are cylindrical and multinucleate whereas the smooth muscle fibers are spindle-shaped and uninucleate.

(iii) Striated muscles are voluntary in nature (under control of our will) whereas the smooth muscle fibers are involuntary in nature (not under control of our will).

Question 12.
What are neurons? Where are they found in the body? What function do they perform in the body of an organism?
Answer:
The cells of nervous tissue are called nerve cells or neurons. Neurons are the structural and functional unit of the nervous system. They are found in the brain, spinal cord and nerves.

Their functions are:

- They are highly specialized for transmitting the stimulus from one place to another within the body on being stimulated.
- They help to coordinate the various functions of the body.

Question 13.
Animals of colder regions and fishes of cold water have thicker layer of subcutaneous fat. Describe why?
Answer:
The thick layer of subcutaneous fat acts as insulator and prevents the heat of the body to escape out. The layer of fat acts as a subcutaneous insulation of body for thermoregulation.

Question 14.
Match the column (A) with the column (B).

A	B
(a) Fluid connective tissue	(i) Subcutaneous layer
(b) Filling of space inside the organs	(ii) Cartilage
(c) Striated muscle	(iii) Skeletal muscle
(d) Adipose tissue	(iv) Areolar tissue
(e) Surface of joints	(v) Blood
(f) Stratified squamous epithelium	(vi) Skin

Answer:
(a) (v)
(b) (iv)
(c) (iii)
(d) (i)
(e) (ii)
(f) (vi)

Question 15.

Match the column (A) with the column (B).

A	B
(a) Parenchyma	(i) Thin walled, packing cells
(b) Photosynthesis	(ii) Carbon fixation
(c) Aerenchyma	(iii) Localized thickenings
(d) Collenchyma	(iv) Buoyancy
(e) Permanent tissue	(v) Sclerenchyma

Answer:

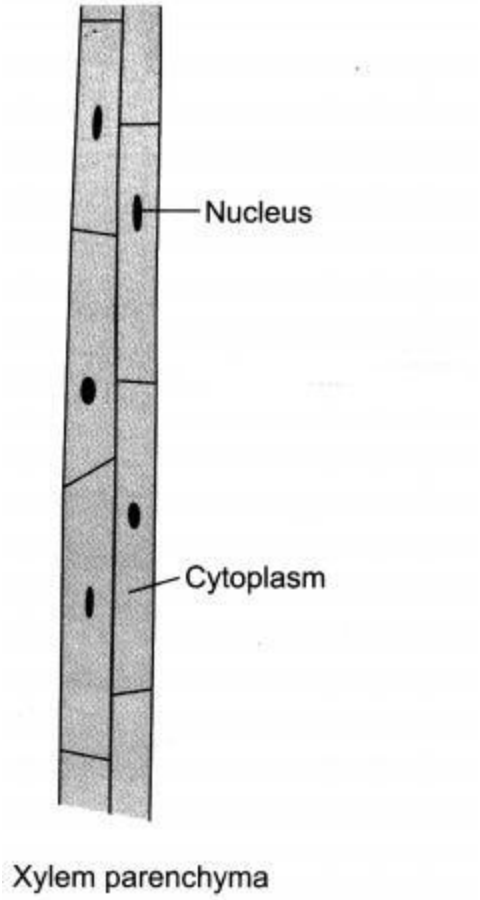
(a) (i)
(b) (c)

(d) (iii)
(e) (iv)

Question 16.
If a potted plant is covered with a glass jar, water vapors appear on the wall of glass jar. Explain why.
Answer:
The water is lost by the plant in the form of water vapor due to the process of transpiration. These water vapors appear on the wall of the glass jar.

Question 17.
Name the different components of xylem and draw a living component.
Answer:
Xylem consists of four elements which are:
(a) tracheid
(b) vessels
(c) xylem parenchyma
(d) xylem fibers
The only living component of xylem is xylem parenchyma whose

basic structure is shown below:



Xylem parenchyma

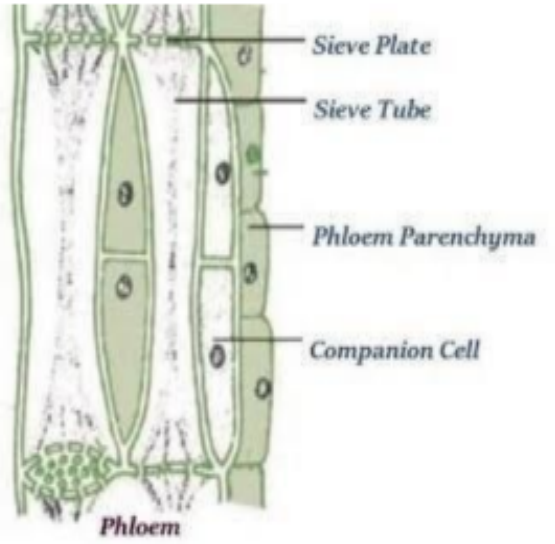
Question 18.

Draw and identify different elements of phloem.

Answer:

Phloem has four elements called sieve tubes, companion cells,

phloem fibers and the phloem parenchyma.



Question 19.

Write true (T) or false (F).

(a) Epithelial tissue is protective tissue in animal body.

(b) The lining of blood vessels, lung alveoli and kidney tubules are all made up of epithelial tissue.

(c) Epithelial cells have a lot of intercellular spaces.

(d) Epithelial layer is permeable layer.

(e) Epithelial layer does not allow regulation of materials between body and external environment.

Answer:

(a) True

(b) True

(c) False

(d) True

(e) False

Question 20.

Differentiate between voluntary and involuntary muscles. Give one example of each type.

Answer:
Voluntary muscles are present in our limbs as skeletal muscles and can be moved by our conscious will whenever we want. Involuntary muscles cannot function on their own. They cannot be controlled by our will or desire. The cardiac muscle and the smooth muscles are involuntary in nature.

Question 21.
Differentiate the following activities on the basis of voluntary (V) or involuntary (IV) muscles.
(a) Jumping of frog
(b) Pumping of the heart
(c) Writing with hand
(d) Movement of chocolate in your intestine
Answer:
(a) (V)
(b) (IV)
(c) (V)
(d) (IV)

Question 22.
Fill in the blanks.
(a) Lining of blood vessels is made up of _____
(b) Lining of small intestine is made up of _____
(c) Lining of kidney tubules is made up of _____
(d) Epithelial cells with cilia are found in _____ of our body.
Answer:
(a) Squamous epithelium
(b) Columnar epithelium
(c) Cuboidal epithelium
(d) Respiratory tract

Question 23.
Water hyacinth floats on water surface. Explain.
Answer:
The parenchyma present in the swollen petiole of water hyacinth is called aerenchyma which has large cavities to provide buoyancy and help them float on the water surface.

Question 24.
Which structure protects the plant body against the invasion of parasites?
Answer:
The epidermis of plants has thick cuticle and waxy substances to prevent the invasion of parasites.

Question 25.
Fill in the blanks.
(a) Cork cells possesses _____on their walls that makes it impervious to gases and water.
(b) _____ have tubular cells with perforated walls and are living in nature.
(c) Bone possesses a hard matrix composed of and _____ and _____
Answer:
(a) suberin
(b) sieve tubes
(c) calcium and phosphorus

Question 26.
Why is epidermis important for the plants?
Answer:
The outermost layer of cells covering an organism is called

epidermis. It is usually made up of a single layer of cells and gives protection.

The epidermis may be thicker in some plants living in dry habitats or often secrete a waxy, water- resistant layer on their outer surface called cutin (chemical substance with waterproof quality) to prevent water loss.

The stomata present on the epidermis of leaves helps in gaseous exchange and the loss of water vapor by transpiration.

The epidermal cells of roots bear root hairs that greatly increase the total absorptive surface area of the roots for absorption of water.

Question 27.

Fill in the blanks.

(a) _____ are forms of complex tissue.
(b) _____ have guard cells.
(c) cells of cork contain a chemical called _____
(d) Husk of coconut is made of _____ tissue.
(e) _____ gives flexibility in plants.
(f) _____ and _____ are both conducting tissues.
(g) Xylem transports and _____ and _____ from soil.
(h) Phloem transport from _____ and _____ to other parts of the plant.

Answer:

(a) Xylem and phloem
(b) Stomata
(c) suberin
(d) sclerenchyma
(e) Collenchyma

(g) water; minerals
(h) Food; leaf

Question 28.

Differentiate between
(i) Xylem and phloem
(ii) Vessel and sieve tube
(iii) Tracheid and vessel

Answer:

Xylem	Phloem
4) Tracheids, vessels, xylem fibres are dead tissues.	4) Phloem fibres are dead tissues.
5) Xylem gives mechanical strength to the plant.	5) Phloem does not give mechanical strength to the plant.
6) Conduction of water by xylem is unidirectional i.e., from roots to apical parts of the plant.	6) Food material conduction is bidirectional i.e., from leaves to storage organs or growing parts or from storage organs to growing parts of plants.
7) Xylem is star shaped.	7) Phloem is not in star shaped.
8) Xylem occupies the center of the vascular bundle.	8) Phloem occurs on outer side of the vascular bundle.
9) Tubular with hard walled cells.	9) Tubular with soft walled cells.

(ii) Vessel and sieve tube –
Vessel:

- They are tubular structures having a hollow lumen and composed of dead cells.
- Vessel helps to conduct water and minerals in plants.
- The walls of vessels are lignified.
- They also provide mechanical strength to the plants.

- Their end walls are completely dissolved.

Sieve Tube:

- They are tubular structures having vacuolated cytoplasm and composed of living cells.
- They help to transport food from leaves to other parts of the plant.
- Their walls are not lignified.
- They do not provide mechanical strength to the plants.
- Their end walls have perforations in form of sieve plate.

(iii) Tracheid and vessel _

S.no	Tracheids	Vessels
1.	Main conducting element of angiosperms.	Main conducting element of gymnosperms.
2.	Having perforated plates.	Perforated plates are absent.
3.	Formed from single cells.	Formed from a number of cells.
4.	Walls are thick with narrow lumen.	Walls are less thick with wide lumen.

Question 29.

Differentiate between striated, unstriated and cardiac muscle fibers.

Answer:

Name of the Muscle	Striated Muscles	Unstriated Muscles	Cardiac Muscles
Structure	They are long, cylindrical and unbranched.	The cells are long and spindle-shaped.	They are cylindrical and branched.
Site/Location	They are present in our limbs.	They are present in iris of the eye, ureters, blood vessels, alimentary canal and bronchi of lungs.	They are present in our heart.
Mode of contraction	Voluntary in nature as they act as per our will.	Involuntary in nature as they are not under the control of our will.	They are involuntary in nature. They show rhythmic contraction and relaxation.
Number of nuclei	They are multinucleate.	They are uninucleate.	They are mostly uninucleate.
Striations	They are striated as they have alternate light and dark bands.	They do not have striations.	They are striated due to presence of light and dark bands.

Question 30

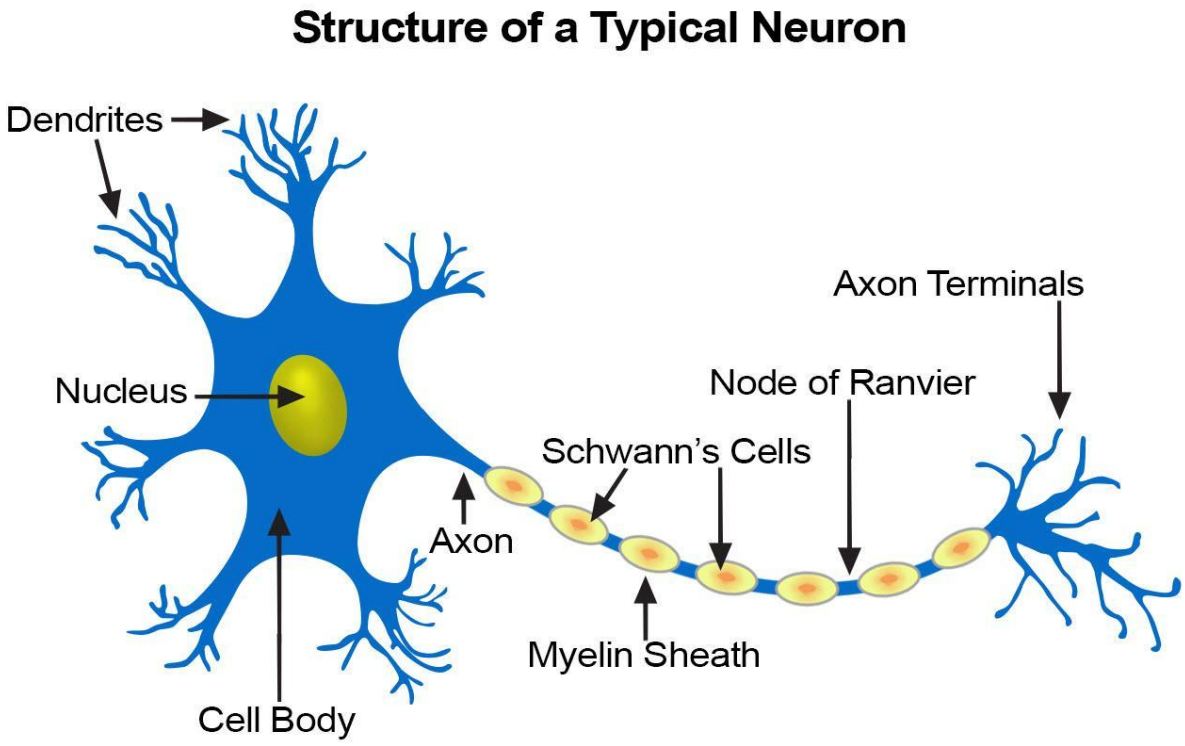
(i) What is nervous tissue?

(ii) Draw a well labelled diagram of neuron. (Label any 4 parts)

Answer:

Nervous tissue is a tissue made of neurons. It is divided into two parts: the central nervous system (CNS) consisting of the brain and spinal cord; and the peripheral nervous system (PNS) which regulates and controls the various functions and activities of the

body.



Question 31.

Write the differences between animal tissue and plant tissue.

Answer:

Plant Tissue:

- The tissue is well differentiated into meristematic tissue and permanent tissue.
- The tissue can grow throughout life due to activity of meristematic tissue.
- They are autotrophic in nature.
- The tissue has more amount of dead tissue which provides mechanical strength to the plants.
- The tissue organization is comparatively simple.

Animal Tissue:

- The tissue is not much differentiated like the plant tissue.
- The tissue does not show growth throughout life.
- They are heterotrophic in nature.
- The tissue has more amount of living tissue than dead tissue.
- The tissue is complex as it is organized into organs and organ systems.

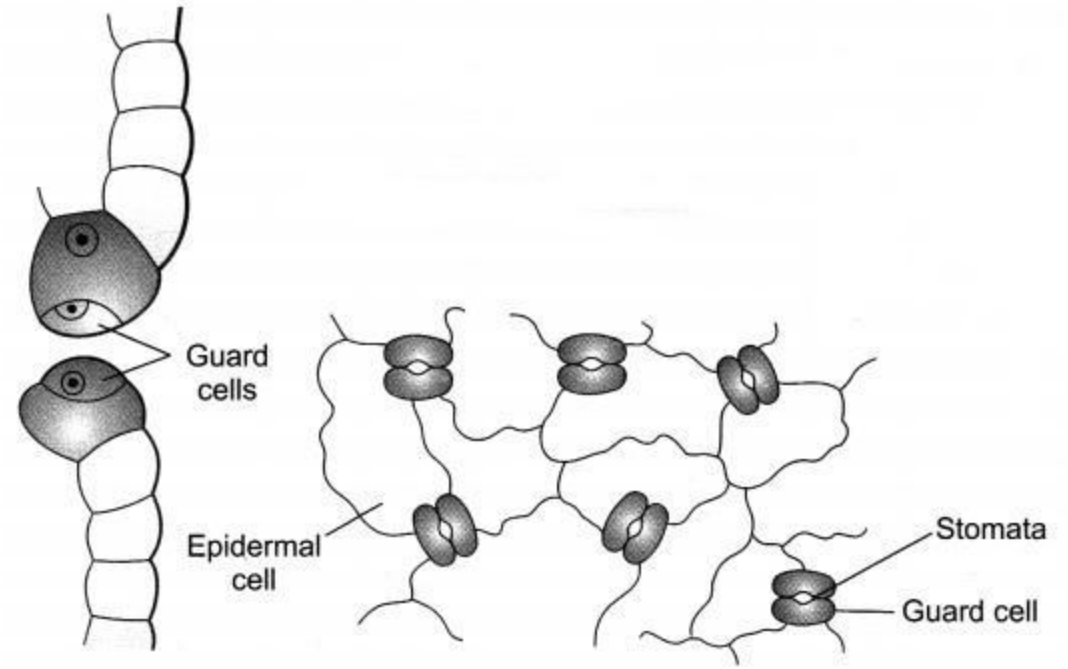
Question 32.
Write a note on the protective tissue in plants. (Give appropriate diagram also)
Answer:
The protective tissues in plants are epidermis and the cork.
(i) Epidermis: The outermost layer of cells covering an organism is called epidermis. It is usually made up of a single layer of cells and gives protection.

The epidermis may be thicker in some plants living in dry habitats or often secrete a waxy, water- resistant layer on their outer surface called cutin to prevent water loss.

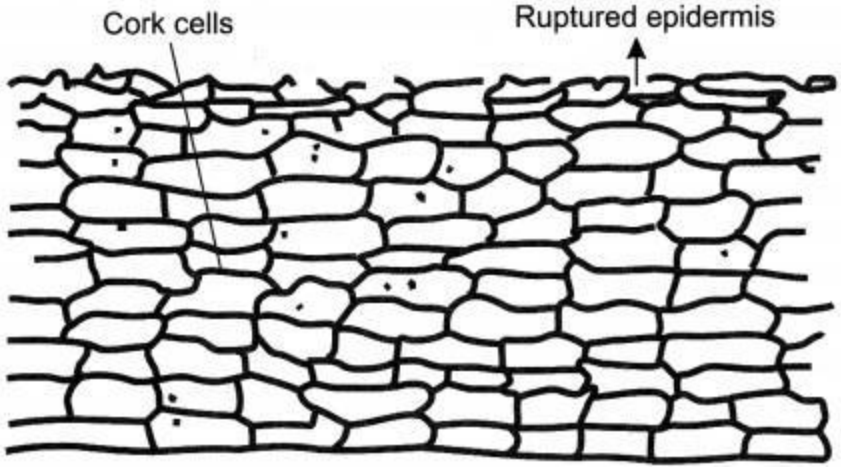
The epidermis of leaves have small pores called stomata which are enclosed by two kidney-shaped cells called guard cells. Stomata help in gaseous exchange and transpiration.

The epidermal cells of roots bear root hairs that greatly increase the total absorptive surface area of the roots for absorption of

water.



(ii) Cork: A strip of secondary meristem replaces the epidermis of the older stem and cuts off cells towards compactly arranged without intercellular spaces and have a chemical called suberin in their walls that makes them impervious to gases and water.



Question 33.

Explain the significance of the following:
(i) Hair-like structures on epidermal cells.

(ii) Epidermis has thick waxy coating of cutin in desert plants.
(iii) Small pores in epidermis of leaf.
(iv) Numerous layers of epidermis in cactus.
(v) Presence of a chemical suberin in cork cells.

Answer:

(i) To increase the total absorptive surface area for absorption of water.
(ii) To prevent water loss by transpiration and protection from pathogens.
(iii) To help in gaseous exchange and transpiration.
(iv) To prevent water loss by transpiration.
(v) To make tissue impervious to gases and water.

Question 34.

Differentiate between sclerenchyma and parenchyma tissues. Draw well labelled diagram.

Answer:

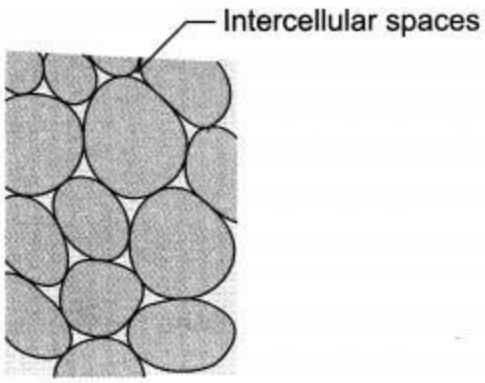
Parenchyma:

- Cells are thin walled and thickened with cellulose.
- It is made up of living cells.
- Cells are usually loosely packed with large intercellular spaces.
- Helps to store nutrients and water in stem and roots.
- It is called chlorenchyma if it contains chlorophyll and performs photosynthesis. The parenchyma of
- aquatic plants have large cavities to provide buoyancy to the plants to help them float, it is then called aerenchyma.

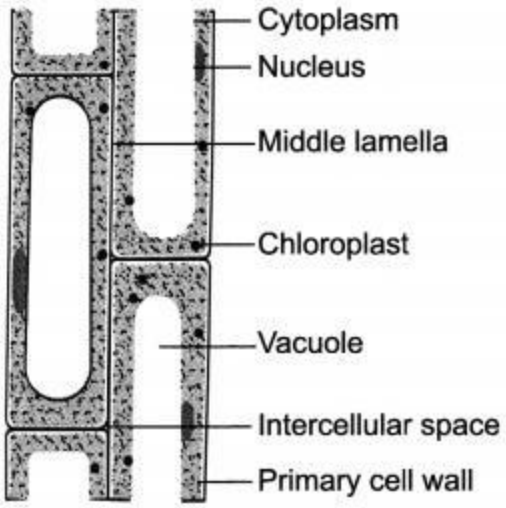
Sclerenchyma:

- Cells are thick and thickened with lignin.
- This tissue is made up of dead cells.

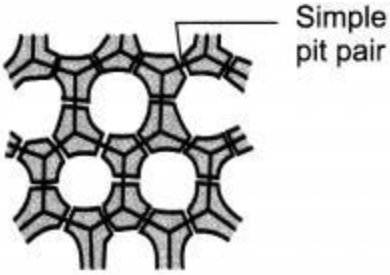
- There are no intercellular spaces between the cells.
- Provides strength to the various parts of the plant.
- The cells are long and narrow, make the plant hard and stiff. This tissue provides strength to the plants and is present in stems, around vascular bundles, in the veins of leaves and in the hard covering of seeds and nuts.



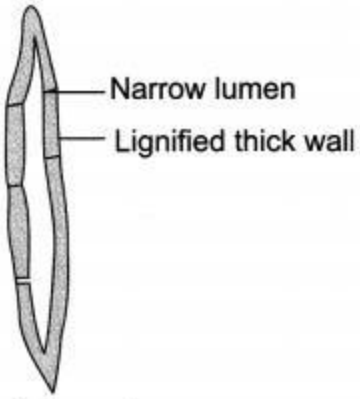
T.S. Parenchyma



L.S. Parenchyma



T.S. Sclerenchyma



L.S. Sclerenchyma

Question 35.
Describe the structure and function of different types of epithelial tissues. Draw diagram of each type of epithelial tissue.
Answer:
Epithelial tissues are the covering or protective tissues and cover

most organs and cavities in the animal body. These cells are tightly packed, form a continuous sheet and are almost without any intercellular spaces between them. E.g., skin, the lining of the mouth, the lining of blood vessels, lung alveoli and kidney tubules are all made of epithelial tissue.

All epithelium is usually separated from the underlying tissue by an extracellular fibrous basement membrane. The types of epithelium on the basis of their structure and functions are:

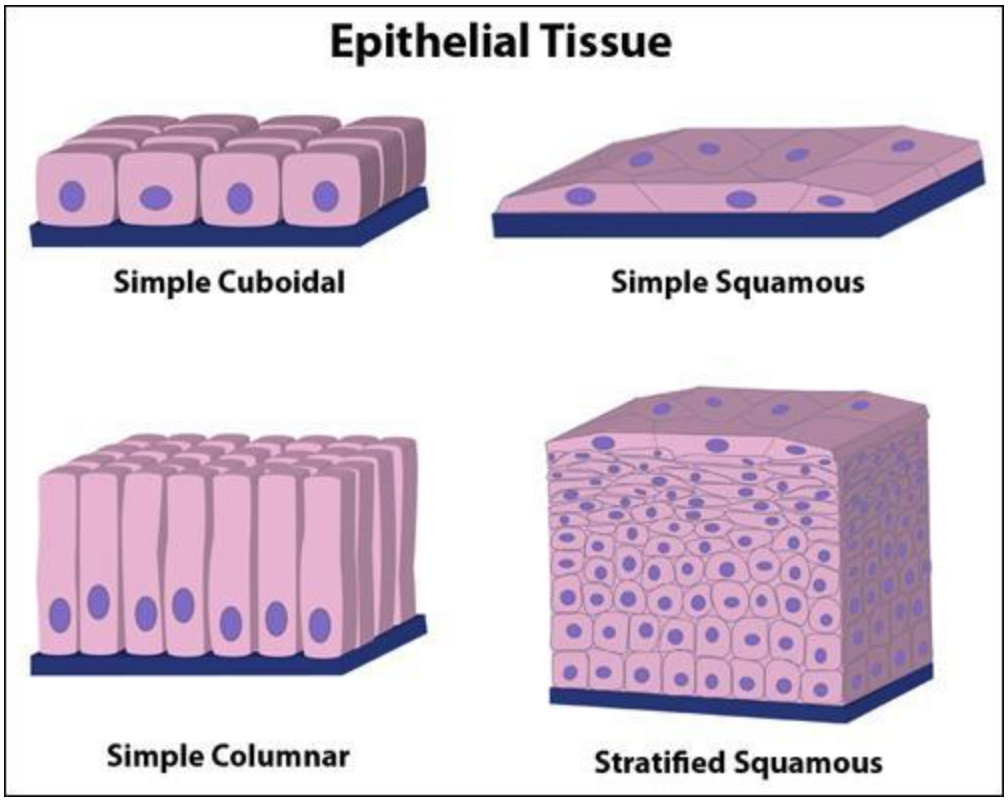
(a) Squamous epithelium: Consists of flattened cells. Present in esophagus and lining of the mouth. Skin epithelial cells are arranged in many layers to prevent wear and tear and are called stratified squamous epithelium.

(b) Columnar epithelium: Has tall or ‘pillar-like’ cells. It forms the inner lining of the intestine.

(c) Cuboidal epithelium: Has cube-shaped cells. It forms the lining of kidney tubules and ducts of salivary glands, where it provides mechanical support.

(d) Ciliated epithelium: Have cilia on the outer surfaces of epithelial cells. The cilia can move and their movement pushes the mucus in the respiratory tract forward to clear it.

(e) Glandular epithelium: Has gland cells which secrete substances at the epithelial surface.



Question 36.

Give reasons for

(a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuole.

(b) Intercellular spaces are absent in sclerenchyma tissues.

(c) We get a crunchy and granular feeling, when we chew pear fruit.

(d) Branches of a tree move and bend freely in high wind velocity.

(e) It is difficult to pull out the husk of a coconut tree.

Answer:

(a) Because the meristematic cells are actively dividing cells and there is no need of storage.

(b) Because they have a thick deposition of lignin in them.

(c) Due to the presence of stone cells (sclerenchyma) in the pear

fruit.
(d) Due to the presence of collenchyma which provides flexibility to the various parts of the plant.
(e) Due to the sclerenchyma present in the husk of the coconut.

Question 37.
List the characteristics of cork. How are they formed? Mention their role.
Answer:
The characteristics of cork are:

- Cells of cork are dead at maturity.
- These cells are compactly arranged.
- Cells do not possess intercellular spaces.
- Cells possess a chemical substance suberin in their walls.
- They are several layers thick.

A strip of secondary meristem replaces the epidermis of the older stem and cuts off the outside cells to form a several-layer thick cork or the bark of the tree. Cells of cork are dead, compactly arranged without intercellular spaces and have a chemical called suberin in their walls that makes them protective in function and impervious to gases and water.

Question 38.
(a) Differentiate between meristematic and permanent tissues in plants.
(b) Define the process of differentiation.
(c) Name any two simple and two complex permanent tissues in plants.
Answer:
(a) Meristematic tissue:

- This tissue consists of cells which continuously divide to produce new cells.
- They are located at specific regions of the plant, i.e., apical, lateral and intercalary.
- The cells of this tissue are very active, lack vacuoles, have dense cytoplasm, thin cell walls and prominent nuclei.

Permanent tissue:

- Consists of cells which have taken up a specific role and lost the ability to divide.
- They are distributed throughout the plant body.
- They are vacuolated, vary in shape and size. Their cell wall may be thick.

(b) The process of taking up a permanent shape, size, and a function by the cells is called differentiation.

(c) Simple: Parenchyma/collenchyma/sclerenchyma Complex: Phloem/xylem

Question 39.
The walls of the sclerenchymatous cells are thickened and have narrow lumen. Which substance thickens it and what is its role?
Answer:
The walls of the sclerenchymatous cells are thickened due to presence of lignin. It helps in providing mechanical strength to the various parts of the plant.

Question 40.
Which type of muscle fibers will contract to remove your hands instantly when you touch a hot object?
Answer:

Striated muscle fibers will contract to remove our hands instantly when we touch a hot object.

Question 41.
Which tissue helps the leaves of lotus plant to float on water? Why?
Answer:
Aerenchyma helps the leaves of lotus plant to float on water. Aerenchyma has large cavities to provide buoyancy to the parts of aquatic plants.

Question 42.
A tissue present in plants helps in storing food and sideways conduction of water. Identify the type of tissue.
Answer:
The tissue is xylem parenchyma.

Question 43.
Which tissue enables the heart to pump blood to various parts of the body? Why?
Answer:
The cardiac muscles help the heart to pump blood to various parts of the body as they show rhythmic contraction and relaxation throughout their life.

Question 44.
What will be the consequence of
(i) removal of blood platelets from blood?
(ii) removal of cutin from the layer of epidermis?
Answer:
(i) Removal of blood platelets from blood will inhibit clotting of blood if an injury occurs and the person may bleed to death.

(ii) Removal of cutin would increase the amount of water loss from the leaves of the plants.

Question 45.
Some actions of our body are under our control but many of them are not under our control. Why is it so?
Answer:
The actions of our body are controlled by our muscles. The voluntary actions are under the control of our will and are caused by the activity of striated muscles, e.g., movement of our limbs. The involuntary. actions are not under the control of our will and are performed by the smooth muscles, e.g., the activity of bronchi of lungs. Even the activity of cardiac muscles which helps in the rhythmic contraction and relaxation of heart are involuntary in nature.

Question 46.
Which kind of meristem can help grasses to regenerate parts removed by the grazing herbivores?
Answer:
Intercalary meristem can help grasses to regenerate parts removed by the grazing herbivores.

Question 47.
Name the tissue which replaces the epidermal tissue in older stem and is rich in suberin. What is the function of suberin?
Answer:
Cork is the tissue which replaces the epidermal tissue in older stem and is rich in suberin. Suberin present in the walls of cork cells makes them impervious to gases and water.

Question 48.
The process of transpiration does not occur properly when the

leaves are covered by a layer of oily substance. Why? Which other functions will get affected due to this covering?

Answer:

The layer of oily substance will close the stomata present in leaves and this would decrease the rate of transpiration. The rate of exchange of gases decreases and consequently the rate of photosynthesis would also decrease.

Question 49.

Raman got injured while playing football. His injured leg started bleeding and his friends immediately rushed to take him to the doctor to give him first aid. The blood flowing from the wound stopped after some time and the doctor applied antiseptic on the wound.

(i) Why did the blood stop flowing after some time from the wound?

(ii) What kind of tissue is blood? Why?

(iii) What values are shown by Raman's friends?

Answer:

(i) The blood stopped flowing after some time from the wound as the blood platelets present in blood helped in clotting of blood.

(ii) Blood is a connective tissue. Blood is considered as a type of connective tissue as they have the same origin as other types of connective tissue and helps to connect the different parts of the body.

(iii) The values shown by Raman's friends are presence of mind, helpful and a caring nature.

Question 50.

During a sports event, Shivani suffered a sprain due to which she was not able to run. Her teacher gave her support and told her

that it was due to a ligament tear. She also called the doctor to give treatment to Shivani.
(i) What is a ligament? What kind of tissue is it?
(ii) Which type of fibrous tissue has great strength, limited flexibility and is similar to ligament?
(iii) What values are shown by Shivani's teacher?

Answer:

(i) Ligament is the connective tissue which connects two bones. It is a kind of connective tissue.

(ii) Tendon is a fibrous tissue that has great strength, limited flexibility and is similar to ligament.

(iii) The values shown by her teacher are knowledge, scientific approach and a caring nature.

Question 51.

Rishi brought an aquatic plant which was floating on the surface to the science laboratory of water. He cut a section of the leaf of the plant and saw a tissue with lot of air cavities in it. He went to his teacher and discussed about the role of the air cavities in the leaves of the aquatic plant.
(i) Which type of tissue present in plants has air cavities?
(ii) What is the role of large air cavities in the leaves of such plants?
(iii) What values are shown by Rishi?

Answer:

(i) Aerenchyma is the tissue present in the plants and has large air cavities.

(ii) The large air cavities in the leaves of such plants help in providing buoyancy to the leaves to help them float on water.

(iii) Rishi shows a scientific attitude, inquisitive nature and empirical approach.