

Tissues

1. The walls of cork cells are thickened by the deposition of an organic substance which make these cells impermeable to water and gases. This substance is

(a) Pectin (b) Suberin
(c) Lignin (d) None of these

2. Which of the following statement regarding apical meristem is incorrect?

(a) It brings about increase in length of the root and stem.
(b) It develops by dedifferentiation of permanent tissues.
(c) It constitutes primary meristem.
(d) None of these

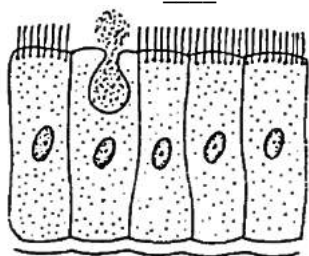
3. Select the correct statement regarding meristematic tissues.

(a) They are found at specific locations in the animal body.
(b) They have cells with thick secondary walls.
(c) They perform the function of growth and division.
(d) Both (a) and (c)

4. X is a conducting tissue that is involved in bidirectional transport of materials in a plant. X is _____.

(a) Phloem (b) Xylem
(c) Meristem (d) Sclerenchyma

5. The tissue shown here is _____.



(a) Simple squamous epithelial tissue
(b) Striated muscle tissue
(c) Areolar tissue
(d) Ciliated columnar epithelial tissue

6. Which of the following tissues provides mechanical strength and flexibility to plants?

(a) Parenchyma (b) Collenchyma

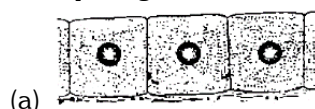
(c) Aerenchyma (d) Sclerenchyma

7. Match column I with column II and select the correct option from the given codes.

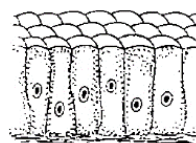
Column I	Column II
(A) Food storage	(i) Phloem
(B) Food conduction	(ii) Xylem
(C) Mechanical strength	(iii) Parenchyma
(D) Water conduction	(iv) Sclerenchyma

(a) A - (iii), B - (i), C - (iv), D - (ii)
(b) A - (ii), B - (iii), C - (iv), D - (i)
(c) A - (ii), B - (i), C - (iii), D - (iv)
(d) A - (ii), B - (i), C - (iv), D - (iii)

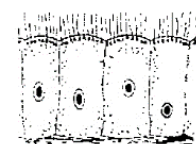
8. Which of the following epithelial tissues, lines the nasal passages and oviducts?



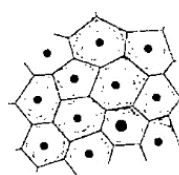
(a)



(b)



(c)



(d)

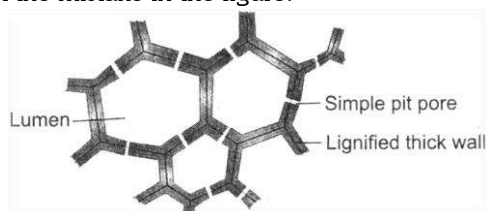
9. Which of the following are incorrectly matched?

(i) Adipose tissue	Fat storage
(ii) Stratified epithelium	Skin
(iii) Areolar tissue	Packaging tissue
(iv) Squamous epithelium	Kidney tubules
(v) Cardiac muscle	Branched and multinucleate
(vi) Striated muscle	Unbranched and unicucleate

(a) (v) and (vi) only (b) (ii), (iv) and (vi) only

- (c) (iii) and (iv) only (d) (iii) and (v) only

10. Mohit was asked to draw a labelled diagram of sclerenchyma tissue as seen in longitudinal section. The figure he drew is shown here. Point out the mistake in the figure.

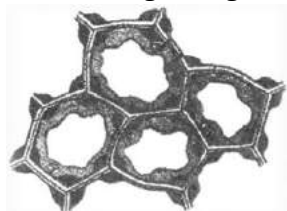


- (a) Instead of simple pit pore, it should be bordered pit.
 (b) The cell walls are not lignified in sclerenchyma.
 (c) The nucleus and cytoplasm are not shown.
 (d) The figure shows transverse section instead of longitudinal section of tissue.

11. The matrix of bone is in the form of thin concentric rings, called _____. Bone cells, called _____ are present in fluid-filled spaces called _____. These fluid filled spaces of the bone communicate with each other by network of fine canals, called _____.
 Select the correct sequence of words to complete the above passage.

- (a) Lacunae, Osteoblasts, Lamellae, Canaliculi.
 (b) Lamellae, Osteocytes, Lacunae, Canaliculi
 (c) Lamellae, Chondrocytes, Canaliculi, Lacunae
 (d) Lacunae, Adipocytes, Canaliculi, Sarcoplasm

12. The tissue shown in the given figure is



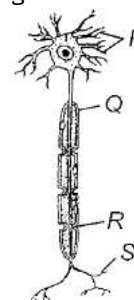
- (a) Angular collenchyma, in which wall thickenings are present at the angles
 (b) Sclerenchyma, in which uniform wall thickenings are present
 (c) Xylem fibres with narrow central lumen
 (d) Phloem parenchyma with abundant food reserve.

13. Match column I with column II and select the correct option from the given codes.

Column I	Column II
(A)	(i) Phagocytosis
(B)	(ii) Blood clotting
(C)	(iii) Transport of oxygen

- (a) (A)-(i), (B)-(ii), (C)-(iii)
 (b) (A)-(ii), (B)-(iii), (C)-(i)
 (c) (A)-(i), (B)-(iii), (C)-(ii)
 (d) (A)-(iii), (B)-(i), (C)-(ii)

14. Which of the following statement is correct about the cell shown in figure?



- (a) P receives nerve impulse from Q and conveys it to other cells.
 (b) P conducts impulse away from cyton while S conducts impulse towards cyton.
 (c) R is called node of Ranvier.
 (d) All of these

15. Select the incorrect differences between collenchyma and sclerenchyma.

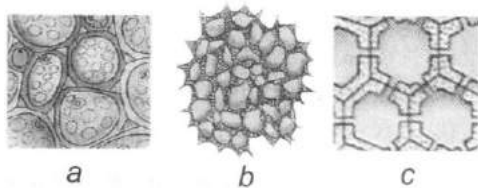
	Collenchyma	Sclerenchyma
(i)	It is made up of dead cells.	Its cells are living.
(ii)	Lumen or cell cavity is wide.	Lumen or cell cavity is usually narrow.
(iii)	It provides hardness to the region where it occurs.	It keeps the organ soft.
(iv)	Wall thickening is not uniform.	Wall thickening is uniform.

(v)	Pits are simple and straight.	Pits are simple, oblique and may be branched.
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- (a) (i) and (iii) only (b) (i), (iii) and (iv) only
(c) (ii), (iv) and (v) only (d) (i) and (iv) only

Achievers Section (HOTS)

- 16.** Observe the given figures of three different plant tissues and select the correct option.



- (a) a and b consist of living cells while c consists of dead cells.
(b) Cytoplasm is present in cells of a while it is absent in cells of b and c.
(c) Cell walls of a, b and c bear uniform thickening of suberin.
(d) a provides mechanical strength to the plant while b and c serve as storage tissues.

Direction (Q. No. 17 and 18): Refer to the given dichotomous key and answer the following questions.

- I.** (a) The cells of tissue have walls. - Go to II
(b) The cells of tissue have no walls. - Go to III
II. (a) The cells are living. - Go to IV
(b) The cells are dead. - Go to V
III. (a) The tissue lines the oviducts. - R
(b) The tissue transports nutrients. - S
IV. (a) Cells store air. - P
(b) The tissue conducts nutrients. - Q
V. (a) The tissue conducts water. - T
(b) It is only a mechanical tissue. - U

- 17.** Select the incorrect option regarding tissues P, Q, R, S, T and U.

- (a) P is found in aquatic floating plants whereas T is greatly reduced or absent in aquatic plants.
(b) R and S are animal tissues while P and Q are plant tissues.
(c) S can be xylem, Q can be blood and U can be parenchyma.
(d) R is ciliated epithelial tissue whereas U possesses uniform wall thickenings of lignin.

- 18.** Select the correct match of tissue and its location in body.

- (a) P - Apical meristem, R - Skin
(b) Q - Epidermal covering of leguminous seeds, U - Leaf petiole
(c) S - Fruit pulp, T - Bone cavities
(d) R - Nasal passages, U - Grit of guava

Direction (Q. No. 19 and 20): Read the given passage in which some words are italicised and answer the following questions.

The nervous tissue consists of special nerve cell called cyton. The cell is divided into axon and neuron. The cyton has thread like structures extending from it called X. The axon ends into terminal branches that form a Y with other nerve cells.

- 19.** Select the correct statement regarding the italicised words.

- (a) Cyton should be replaced by axon and vice-versa.
(b) Neuron should be replaced by dendrites.
(c) The positions of cyton and neuron should be interchanged.
(d) All of these

- 20.** Select the option that correctly identifies X and Y.

	X	Y
(a)	Dendrites	Neuron
(b)	Axon	Cyton
(c)	Dendrites	Synapse
(d)	Synapse	Axon

Answer key

1. B	2. B	3. C	4. A	5. D
6. B	7. A	8. C	9. A	10. D
11. B	12. A	13. D	14. C	15. A
16. A	17. C	18. D	19. C	20. C

HINTS & EXPLANATIONS

1. (b) : Cork cells are dead cells without intercellular spaces. Their cell wall is very thick due to deposition of an organic substance called suberin, which is impermeable to water and gases.
2. (b) Not Available
3. (c) : Meristematic tissues are plant tissues found at specific locations of the plant body and performs the function of growth and division. They have cells with thin and elastic primary walls and abundant cytoplasm.
4. (a) : Phloem is the chief food conducting tissue of vascular plants. It conducts food in both directions, i.e., downwards from leaves to roots and upwards from storage organs to other parts.
5. (d) : The figure shown here is of ciliated columnar epithelial tissue. The cells of this tissue are tall, pillar like that bear cilia on their free surfaces. The nuclei of the cells lie in the basal part. They are found in nasal passages, oviducts etc. The main function of cilia is to maintain the flow of mucus (in nasal passage) or egg (in oviduct) constantly in one direction.
6. (b) : Collenchyma is a permanent living tissue that has cells with angular secondary thickenings. It provides mechanical strength and flexibility to the plant part, where it is present.
7. (a) Not Available
8. (c) : Refer to answer 5.
9. (a) : Cardiac muscles are the muscles of heart. They are uninucleate and branched whereas striated muscles attached to the bones are multinucleate and unbranched.
10. (d) : The figure shows transverse section of sclerenchyma tissue. It is a simple supportive tissue of highly thick-walled cells with little or no cytoplasm. The thickening of cell walls may be due to deposition of lignin or both lignin and cellulose. The adjacent cells possess simple oblique pits.
11. (b) Not Available
12. (a) Not Available
13. (d) : Figure (a) depicts red blood cells which help in transport of oxygen. Figure (b) represents monocyte which is a type of white blood cell and is phagocytic in nature, engulfing bacteria. Figure (c) is of thrombocytes (platelets) which aid in blood clotting at the site of cut.
14. (c) : Structure marked 'P' represent dendrites, 'Q' is neurilemma, 'R' is node of Ranvier and 'S' is axon ending.
The dendrites receive impulses while axon takes impulses away from the cell body or cyton.
15. (a) : Collenchyma is a permanent living tissue of primary plant body. It provides flexibility to soft aerial parts like leaves, young stem of plant so that they can bend without breaking.
Sclerenchyma consists of thick-walled, dead cells. It provides hardness to the region where it occurs.
16. (a) : Figures 'a' and 'b' represent parenchymatous and collenchymatous tissues respectively that are living tissues. Figure 'c' represents sclerenchymatous tissue which comprises of dead cells.
17. (c) : In the given dichotomous key, P is aerenchyma, Q is phloem, R is ciliated columnar epithelium, S is blood, T is xylem and U is sclerenchyma.
18. (d) Not Available
19. (c) : The nervous tissue consists of special nerve cells called neuron. The cell is divided into cyton and axon. The cyton has thread like structures extending from it called dendrites. The axon ends into terminal branches that form a synapse with other nerve cells.
20. (c) Not Available