

Science Worksheet Class IX  
Tissues  
Section A

**A. Choose the correct answer:**

- Find out incorrect sentence.
  - Parenchymatous tissues have intercellular spaces.
  - Collenchymatous tissues are irregularly thickened at corners.
  - Apical and intercalary meristems are permanent tissues.
  - Meristematic tissues, in its early stage, lack vacuoles.
- Girth of stem increases due to
  - apical meristem
  - lateral meristem
  - intercalary meristem
  - vertical meristem
- Which cell does not have perforated cell wall?
  - Tracheids
  - Companion cells
  - Sieve tubes
  - Vessels
- Intestine absorbs the digested food materials. What type of epithelial cells are responsible for that?
  - Stratified squamous epithelium
  - Columnar epithelium
  - Spindle fibres
  - Cuboidal epithelium
- While doing work and running, you move your organs Like hands, legs etc. Which among the following is correct?
  - Smooth muscles contract and pull the ligament to move the bones.
  - Smooth muscles contract and pull the tendons to move the bones.
  - Skeletal muscles contract and pull the ligament to move the bones.
  - Skeletal muscles contract and pull the tendon to move the bones.

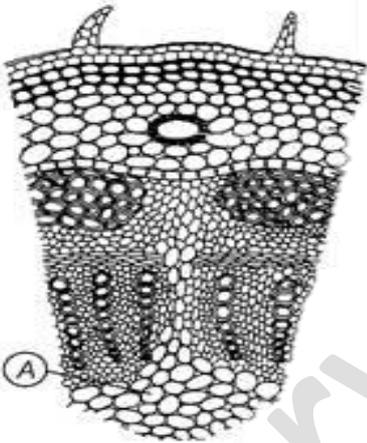
**B. Fill in the blanks:**

- Two kidney-shaped cells called \_\_\_\_\_ cells enclose the stomata.
- \_\_\_\_\_ have tubular cells with perforated walls and are living in nature.
- Bone possesses a hard matrix composed of \_\_\_\_\_ and \_\_\_\_\_
- Cells of cork are dead and have a chemical called \_\_\_\_\_ in their walls that makes them impervious to gases and water.

**Section B**

- Which tissue in plants provides them flexibility?
- Name the water conducting tissue generally present in gymnosperms.
- Which animal tissue helps in repair of tissue and fills the space inside the organ?
- Which blood cells deal with immune reaction?

5. A person met with an accident in which two long bones of the hand were dislocated. What could be the reason?
6. The root tips of a plant were cut and the plant was replanted. What will happen to the plant and why?
7. Give reasons:
  - (a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuole.
  - (b) Intercellular spaces are absent in sclerenchymatous 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.
8. Determine the location of the following tissues:
  - (a) Unstriated muscle fibres
  - (b) Cuboidal epithelium
  - (c) Adipose tissue
  - (d) Striated muscle fibres
9. Give one function of each of the following.
  - (a) Stomata
  - (b) Root nodules
  - (c) Cardiac muscle fibres
10. Identify the region of the stem marked 'A' in the given diagram and the type of simple permanent tissue found in this region. Mention any two characteristic features of the cells found in this tissue.



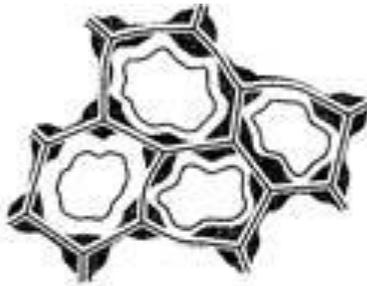
11. Explain the significance of the following:
  - (a) Hair-like structures on epidermal cells.
  - (b) Epidermis has thick waxy coating of cutin in desert plants.
  - (c) Small pores in epidermis of leaf.
  - (d) Numerous layers of epidermis in cactus.
  - (e) Presence of a chemical suberin in cork cells.
12. Explain how the bark of a tree is formed. How does it act as a protective tissue?
13. 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.
  - (a) What is a ligament? What kind of tissue is it?
  - (b) Which type of fibrous tissue has great strength, limited flexibility and is similar to ligament?
  - (c) What values are shown by Shivani's teacher?
14. 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.

- (a) Which type of tissue present in plants has air cavities?
- (b) What is the role of large air cavities in the leaves of such plants?
- (c) What values are shown by Rishi?

15. Match the following:

Column A	Column 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

16. Identify this tissue. Infer the characteristic features of these cells. Specify the function of this tissue. Name any one part of the plant where these cells are present



17. State whether the statement is true/false:

- (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.

18. Differentiate between sclerenchyma, collenchyma and parenchyma tissues. Draw well labelled diagram.

19. What is a neuron? Write the structure and functions of a neuron.

20. Name the type of tissues:

- (a) What is the lining of blood vessels made up of?
- (b) What is the lining of small intestine made up of?
- (c) What is the lining of kidney tubules made up of?
- (d) Where are the epithelial cells with cilia found?