

Solved Question chapter-Tissue class 9

Q1: The study of tissues is called ...

- a) cytology
- b) embryology
- c) histology
- d) pathology

Answer: c) histology

Q:2 Which of the following statement is NOT true?

- (a) Most of the plant tissues are supportive type.
- (b) Tissues ensure division of labour.
- (c) Sedantry existence contribute to the organ system design in animals.
- (d) Organ systems are far more complex in animals than in plants.

Answer: Sedantry existence contribute to the organ system design in animals.

Q3: Many kinds of tissues organise to form a/an

- (a) organ
- (b) organ system
- (c) body system
- (d) organelle

Answer: (a) organ

Q4: Parenchyma is a type of _____

- (a) simple tissue
- (b) complex tissue
- (c) xylem
- (d) phloem

Answer: (a) simple tissue

Q5: Which of the following is not a simple tissue?

- (a) xylem
- (b) parenchyma
- (c) collenchyma
- (d) sclerenchyma

Answer: (a) xylem

Q6: The husk of the coconut is made up of?

- (a) collenchyma
- (b) sclerenchyma
- (c) apical meristem
- (d) intercalary meristem

Answer: sclerenchyma

Q7: The basic principle based on which categorise plant tissues as meristematic and permanent is:

- (a) capacity to do photosynthesis
- (b) capacity to divide
- (c) capacity to locomote
- (d) complexity to perform a function.

Answer: (b) capacity to divide

Q8: Which type of tissue has lignified cell walls?

- (a) Parenchyma
- (b) Collenchyma
- (c) Sclerenchyma
- (d) cambium

Answer: (c) Sclerenchyma

Q9: Which tissue is responsible for the length of the plant?

- (a) Apical meristem
- (b) lateral meristem
- (c) Intercalary meristem
- (d) Epidermis

Answer: (a) Apical meristem

Q10: The girth of the stem or root increases due to ____

- (a) Apical meristem
- (b) Cambium
- (c) Intercalary meristem
- (d) Epidermis

Answer: Cambium (or lateral meristem)

Q11: Which meristem is present at the base of the leaves or internodes on twigs?

- (a) Apical meristem (b) Cambium (c) Intercalary meristem (d) Epidermis

Answer: (c) Intercalary meristem

Q12(CBSE): Which of the following statements is incorrect?

- (a) Some tissues in plants divide throughout the life
- (b) Cell growth in animals is more uniform as compared to plants
- (c) Animals have more dead tissues as compared to plants
- (d) There is no demarcation of dividing and non-dividing regions in animals

Answer: (c) Animals have more dead tissues as compared to plants

Q13: What are the identifying features of meristematic tissues?

- (a) thick cellulose wall, small vacuoles, dense cytoplasm, small nuclei
- (b) thin cellulose wall, almost no vacuoles, dense cytoplasm, prominent nuclei
- (c) thin cellulose wall, no vacuoles, sparse cytoplasm, prominent nuclei
- (d) thick cellulose, large vacuoles, sparse cytoplasm, small nuclei

Answer: (b) thin cellulose wall, almost no vacuoles, dense cytoplasm, prominent nuclei

Q14(CBSE 2011): A permanent slide shows thin walled isodiametric cells with a large vacuole. The slide contains:

- (a) Parenchyma cells (b) Nerve cells (c) Sclerenchyma cells (d) Collenchyma cells

Answer: (a) Parenchyma cells

Q15 (CBSE 2011): Aditi observed following observations while looking into a permanent slide.

(i) Cells are long and cylindrical

(ii) Light and dark bands are present.

It could be a slide of :

(a) striated muscle fibre

(b) smooth muscle fibre

(c) neuron

(d) parenchyma cells

Answer: (a) striated muscle fibre

Q16: The inner lining of blood vessels is made up of which tissues?

(a) Nervous tissue (b) Epithelial tissue (c) Connective tissue (d) Muscle tissue Answer: (b) Epithelial tissue

Q17: What is a tissue?

Answer: Groups of cells which have a common origin, with similar structure and work together to give the highest possible efficiency of function is called tissue. Blood, phloem and muscle are all examples of tissues.

Q18: What is histology?

Answer: The branch of biology which deals with the study of tissues and their organization in organs, is called histology

Q19: Explain the statement 'Tissues exhibit division of labour'. Give examples.

OR

Q: What is the utility of tissues in multi-cellular organisms?

Answer: In multi-cellular organisms there are millions of cells. Each specialised function is taken up by a different group of cells called tissue. Or Group of cells, forming a tissue are capable of doing a particular function efficiently. Thus Different tissues carry out different types of functions.

E.g. In human beings, muscle cells contract and relax to cause movement, nerve cells carry messages, blood flows to transport oxygen, food, hormones and waste material and so on.

In plants, vascular tissues conduct food and water from one part of the plant to other parts. So, multi-cellular organisms show division of labour.

Q20: Why do plants have more dead tissues as compared to animals?

OR

Q: Why do plant tissue require less amount of energy in comparison to animal tissues?

Answer: Most of the plant tissues are dead, since dead cells can provide mechanical strength as easily as live ones, and need less maintenance. Also plants have sedentary life i.e. they are stationary. Therefore plant tissues require less amount of energy.

Q21: Why do animals tissues require more energy as compared to plant tissues?

Answer: Animals move from one place to another in search of food, shelter etc., hence they need more energy and there more tissues are living.

Q22: Identify which of the following plant tissues are living or dead?

Apical Meristem , Parenchyma, Aerenchyma, Collenchyma, Sclereids, Tracheids, Xylem Fibres, Xylem Parenchyma
Phloem fibre , Phloem Parenchyma, Vessel, Sieve Tubes

Answer:

Living: Apical Meristem, Parenchyma, Aerenchyma, Collenchyma, Xylem Parenchyma, Phloem Parenchyma, Sieve Tubes

Dead: Sclereids, Tracheids, Xylem Fibres, Phloem fibre, Vessel

Q23: Name types of simple tissues.

Answer: Simple tissues (made up of one type of cells) are of three types:

1. Parenchyma 2. Collenchyma 3. Sclerenchyma

Q24: Where is apical meristem found?

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

Q25: Which tissue helps in increasing the length of stem and root?

OR

Q: Which tissues are responsible for the axial growth of plants?

Answer: Apical Meristem.

Q26: Which tissue makes up the husk of coconut?

Answer: Sclerenchymatous tissue

Q27: What are the constituents of phloem?

Answer: Four types:

- Sieve Tubes
- Companion Cells
- Phloem fibres
- Phloem parenchyma

Q28: Name the tissue responsible for the movement in our body.

Answer: Muscular tissue.

Q29: What does a neuron look like?

Answer: A neuron consists of a cell body with a nucleus and cytoplasm, from which long thin hair-like parts arise.

Each

neuron has a single long part, called the axon. It has many short, branched parts called dendrites. An individual nerve cell

may be up to a metre long.

Q30: Give three features of cardiac muscles.

Answer:

1. Cardiac muscles of the heart show rhythmic contraction and relaxation throughout life.
2. These are involuntary muscles and form the walls of the heart.
3. They are cylindrical, branched and uninucleate.
4. They show characteristics of both striated and unstriated muscles.

Q 31: What are the functions of areolar tissue?

Answer:

1. It is found between skin and muscles and around blood vessels. It binds skin with underlying parts.
2. It acts as a filling medium and fills the gap between the organs and hence protects internal organs.
3. It also helps in repairing damaged tissues.

Q32: List the characteristics of meristematic tissues.

Answer:

1. They are actively dividing cells and they divide throughout the life.
2. Cells are compactly arranged, NO intercellular spaces.
3. Lack vacuoles
4. Cells have dense cytoplasm, thin cell walls
5. Prominent Nuclei

Q33: Where do we find intercalary meristem?

Answer: Intercalary meristem are present at the base of leaves or internodes.

Q34: Which tissues are responsible for the secondary growth of plants?

Answer: Vascular Cambium and Cork Cambium (also called secondary meristems) are responsible for the secondary growth. They increase the thickness (size of the girth) of the plant body.

Q35: What do you mean by 'Differentiation' in plant tissues?

Answer: The cells formed by meristematic tissue take up a specific role and lose the ability to divide. As a result, they form a permanent tissue. This process of taking up a permanent shape, size, and a function is called differentiation.

Q36: What is the shape of Parenchyma cells?

Answer: Iso-diameteric (same size)

Q37: What is the structure and nature of Parenchyma tissue?

Answer: Living cells, thin walled, cell wall composed of cellulose and Pectin, large intercellular spaces

Q38: Where do you find Parenchyma cells in Plants?

Answer: Widely distributed in stem, root, leaves, flower.

Q39: What are the identifying features of collenchyma tissue?

Answer:

1. Long and narrow cells
2. cell walls are irregularly thickened at corners due to deposition of cellulose or pectin.
3. oval, circular or polygonal in shape
4. Very little intercellular spaces are present.

Q40: Where do you find collenchyma tissues in plants?

Answer: Below the epidermis of stem and around veins of leaves.

Q41: Which tissue primarily attributes to easy bending of various parts of plants (like stem, leaves)?

Answer: Collenchyma

Q42: Which plant tissues are often called as stone cells?

Answer: Sclerenchyma

Q43(CBSE2011): Deepa was shown two slides of plant tissues: parenchyma and sclerenchyma. She can identify sclerenchyma by the

- (a) location of nucleus
- (b) size of cells
- (c) thickness of cell walls
- (d) position of vacuoles

Answer: (c) thickness of cell walls.

The walls of sclerenchyma tissues are thickened due to lignin (a chemical substance which acts as cement and hardens them).

Q44: What is aerenchyma?

Answer: It is a specialized parenchyma found in aquatic plants. It consists of network of cells that enclose large air cavities. It provides buoyancy to the plants to help them float

Q45: What is the primary surface tissue of the entire plant?

Answer: Epidermis.

Q46: How does epidermis help xerophytes?

Answer: Xerophytes are the plants which grow in desert conditions. In plants living in very dry habitats, epidermis may be thicker since protection against water loss is critical. The entire surface of a plant has this outer covering of epidermis. It protects all the parts of the plant. It also releases a wax-like substance called cutin which restricts transpiration.

Q47: Which meristem replaces epidermis as the protective covering?

Answer: Secondary meristem called periderm or cork cambium.

Q48: List the functions of epidermis.

Answer:

1. protection against loss of water
2. protection against mechanical injury.
3. protection against infection (e.g. fungus infection).
4. In roots epidermis have hair like projects which increase the surface area for absorption of water and minerals.

Q49: Which tissue is known as living mechanical tissue?

Answer: Collenchyma.

Q50: Why the cell walls of collenchyma tissues are unevenly thickened?

Answer: The cell walls are unevenly thickened due to deposition of excessive cellulose, and pectin.

Q51: Are Collenchyma tissues present in roots of the plants?

Answer: No, Collenchyma is absent in root system. It is present in stem, petioles, veins of leaf.

Q52: Usually Shrubs and herbs grow in open places and are exposed to forceful winds. But they do not break. Why?

Answer: The aerial young parts of shrubs and herbs contain collenchyma tissues which provide flexibility and elasticity to plants to withstand against winds.

Q53: Name the chemical released by cork cells?

Answer: Suberin which makes them impervious to gases and water.

Q54: How are complex tissues different from simple tissues?

Answer: Complex tissues are made of more than one type of cells.

Q55: Name two types of complex tissues.

Answer: Xylem and Phloem

Q56: Why are Xylem and Phloem are called vascular or conducting tissues?

Answer: Since both xylem and phloem tissues transport materials, they are together called vascular tissues.

Q57: Which plant tissue is considered to have played an important role in survival of terrestrial plants?

Answer: Vascular tissue i.e. xylem and phloem.

Q58: Why vascular tissue is considered a distinctive feature responsible for survival of plants in terrestrial plants?

Answer: Fossils of plants show that vascular tissue appear 400 million years ago. It is believed that aquatic plants moved to terrestrial environment and adaptations like vascular tissue, protected seeds, true roots formation etc. helped in their survival.

1. Vascular tissues transport water and minerals throughout plant. because of this adaptation, water absorbed by roots, is able to reach to different parts of the plant. Thus water balance is maintained properly inside plant body. Similarly, food prepared by leaves by photosynthesis is transported to all parts of the plants.
2. Vascular tissue also provide structural support to plant. Vascular tissues forms a sort of skeleton and provides support to root, stem and leaves. It also enable plant to grow upright i.e. become taller.

Q59: Is xylem (or phloem) homogenous tissue or heterogeneous tissue?

Answer: Xylem and phloem both are heterogeneous tissue and are made up of different type of cellular elements.

Q60: List the cellular elements of xylem tissue?

Answer: Four types:

1. Xylem tracheids
2. Xylem tracheae or vessels
3. Xylem fibers and
4. Xylem parenchyma

Q61: What is the role of xylem tissue?

Answer: Xylem tissues are specialized for the conduction of water and mineral substances in the plant body.

1. Tracheids and vessels forms tubular structures to transport water and minerals vertically (unidirectional).
2. Xylem parenchyma stores food and helps in the sideways conduction of water.
3. Fibres are mainly supportive in function.

Q62: Name the cellular elements of Phloem tissue.

Answer: Four types:

1. Sieve tubes
2. Companion cells
3. Phloem parenchyma and
4. Phloem fibres

Q63: List functions of phloem tissue?

Answer:

1. Phloem transport food in both directions.
2. Sieve tubes and companion cells are involved in trans-location of organic substances.
3. Phloem parenchyma and phloem fibres play supporting role in the transportation process.

Q64: Which Phloem cellular element has tubular structure with perforated walls?

Answer: Sieve tubes

Q65: Why are Xylem and Phloem known as conducting tissues?

Answer: Because both of them help in conduction of water, mineral and food.

Q66: Why are Xylem and Phloem called as vascular tissues?

Answer: Because they together constitute vascular bundle in plants.

Q67: Why are Xylem and Phloem known as complex permanent tissues?

Answer: Because both of them are made of more than one type of cells (heterogeneous).

Q68: Why do meristematic cells lack vacuoles?

Answer: The purpose of vacuole is to store food and waste product. Since meristems are young cells and are actively dividing, they do not participate actively in food preparation. Neither they produce large waste and hence lack vacuoles.