

Biology

CLASS NOTES FOR CBSE

Chapter 03. Tissues

01. Introduction

A group of cells similar in structure that work together to perform a particular function forms a tissue. All cells of a tissue have common origin. For example, human nervous tissues

Importance of tissues.

- (i) Formation of tissues has brought about a division of labour in multicellular organisms.
- (ii) Tissues become organised to form organs and organs into organ systems.
- (iii) Workload of individual cell has decreased due to origin of tissues.
- (iv) As a result of improved organisms and higher efficiency, multicellular organisms have higher survival.

02. Why plants and animals are made of different types of tissues

Plant tissues	Animal tissues
(i) In plants, dead supportive tissues are more abundant as compared to living tissues.	(i) In multicellular animals living tissues are more common as compared to dead tissues.
(ii) They require less maintenance energy	(ii) They require more maintenance energy.
(iii) There is a differentiation of meristematic and permanent tissues.	(iii) Such a differentiation is absent in them.
(iv) Due to activity of meristematic tissues plants continue to grow throughout life	(iv) Animals do not show growth after reaching maturity. Reparative growth is however present.
(v) Organization of plant tissues is simply	(v) Organization of animal tissues is complex with the development of more specialized and localized organs and organ systems.
(vi) Tissues organization is meant for stationary habit of plants.	(vi) Tissues organization is targeted towards high mobility

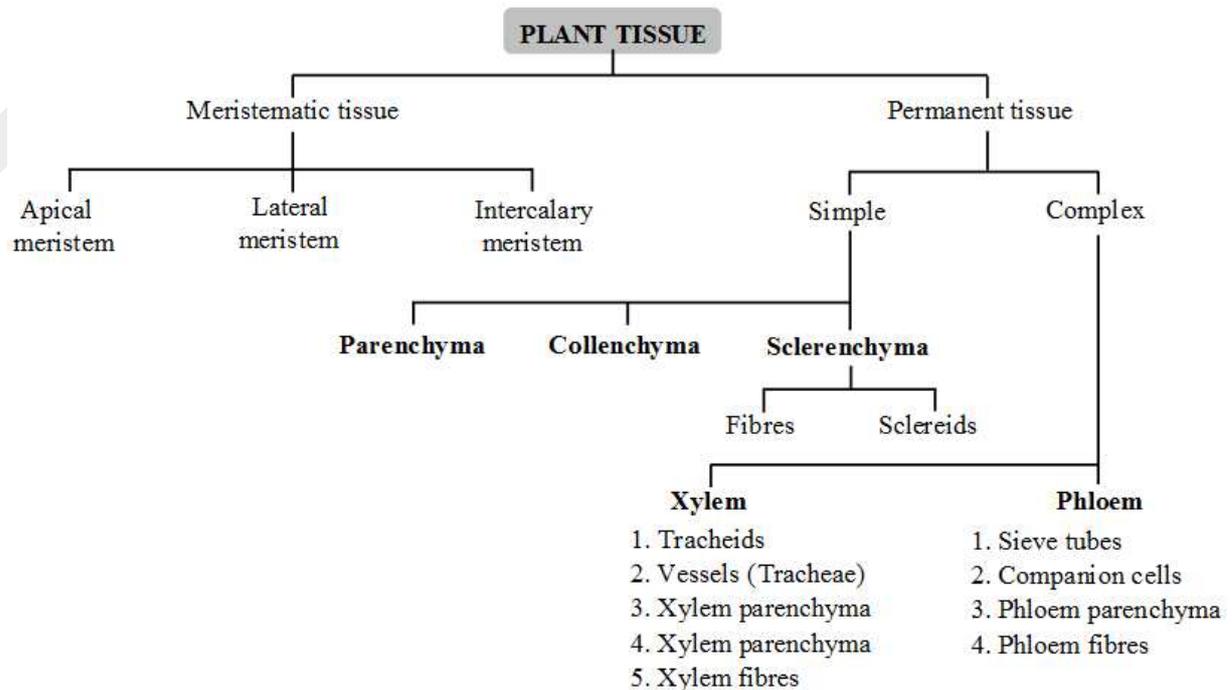


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03. Plant Tissues

Based on the dividing capacity of the tissues, various plant tissues can be classified as meristematic and permanent tissues



(a) Meristematic Tissues (Meristems)

- The cells of meristematic tissue are similar in structure and have thin cellulose cell walls.
- The meristematic cells may be spherical, oval, polygonal or rectangular in shape.
- The meristematic cells are compactly arranged and do not contain any intercellular space between them.
- Each meristematic cell contains dense or abundant cytoplasm and a single large nucleus
- The meristematic cells contain few vacuoles or no vacuoles at all

According to their position in, plant, meristems are apical, lateral and intercalary

- Apical meristems.** These are situated at the growing tip of stems and roots, i.e., at shoot apex and root apex
- Lateral meristems.** These are found beneath the bark (called cork cambium) they occur in thin layers. Cambium is the region which is responsible for growth in thickness
- Intercalary meristems.** They are located at the base of leaves or internode, e.g., stems of grasses and other monocots.

- Permanent Tissues** Cells derived from division of meristematic tissue take up specific role and lose the ability to divide. They, thus, form, a type of permanent tissue.



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