

Subject - Biology Class - VII

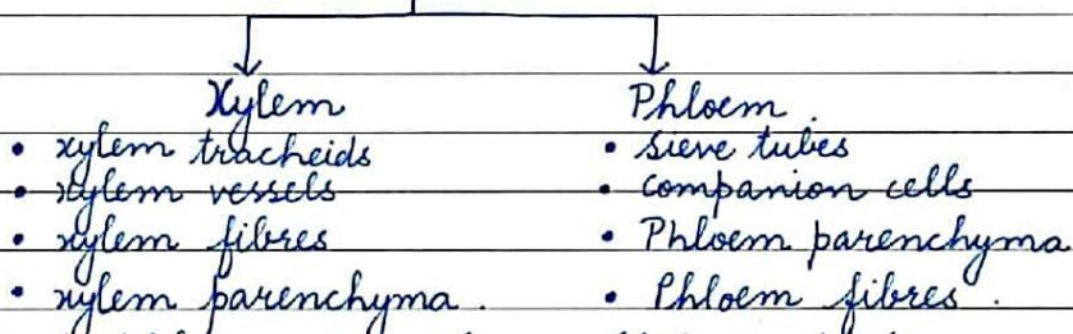
Chapter - 1 Plant and Animal Tissues.

Teacher : Ms Nidhi Rana

Date 22.04.2024

In the previous lecture you have learnt about the tissue and its importance. Also, you must have attained knowledge about meristematic and simple permanent plant tissue. To continue further, we will discuss the complex permanent plant tissue.

Complex permanent tissue / vascular tissue



Xylem and phloem are also called conducting tissues. It consists of different types of living as well as dead cells which work together as a unit to perform a common function.

- (a) Xylem - Xylem is a vascular as well as a mechanical tissue. It is mainly responsible for conduction of water and minerals from roots to the top of the plant, hence also called water conducting tissue. Xylem is formed of thick-walled, tubular and dead cells. These cells are placed end-to-end, one above the other forming vessels. The end walls of vessels dissolve partially or completely forming a continuous channel. Tracheids are non-living elongated cell with tapering ends. The wall is highly thickened with lignin, except at certain spots known as pits.

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Xylem parenchyma consists of living cells and performs the function of storage.

Xylem fibres provide mechanical support.

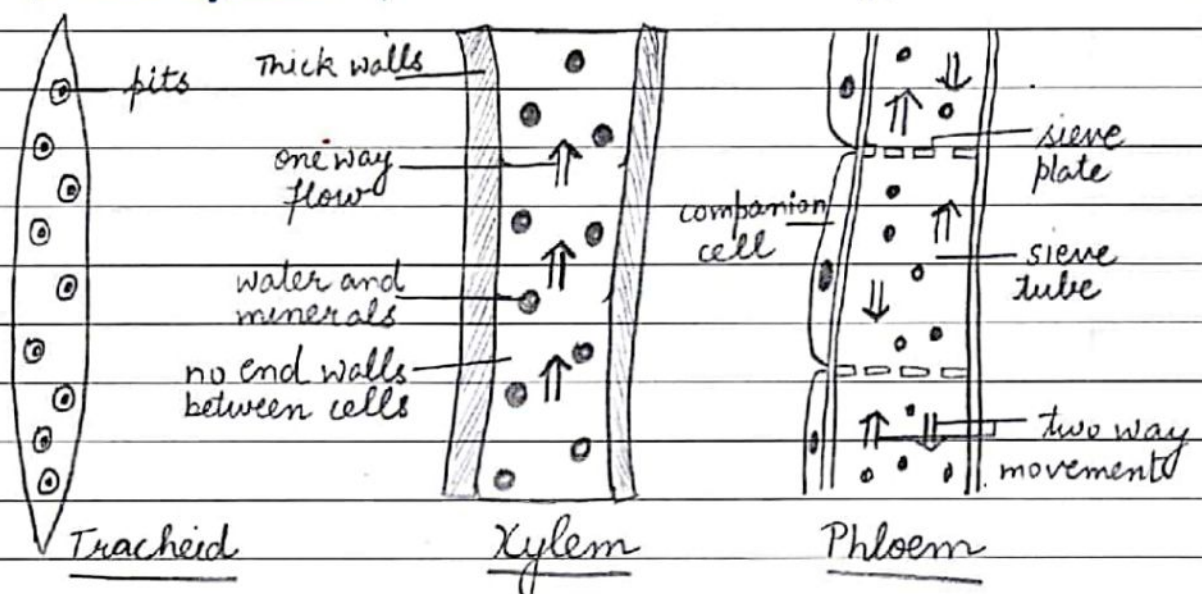
★ Old xylem forms the wood.

Phloem - Phloem is formed of living tubular cells which provide a passage for the downward and upward movement of the food, manufactured in the leaves, to various parts of the plant.

Sieve tubes are the main conducting elements in the phloem. These are elongated, cylindrical, thin walled cells. The end wall of each sieve tube is perforated (have fine pores) called sieve plates.

Companion cells are associated with the sieve tubes. These cells have dense cytoplasm and prominent nuclei. The companion cells help the sieve tubes in the conduction of food material.

Phloem parenchyma is concerned with storage while the phloem fibres provide mechanical support.

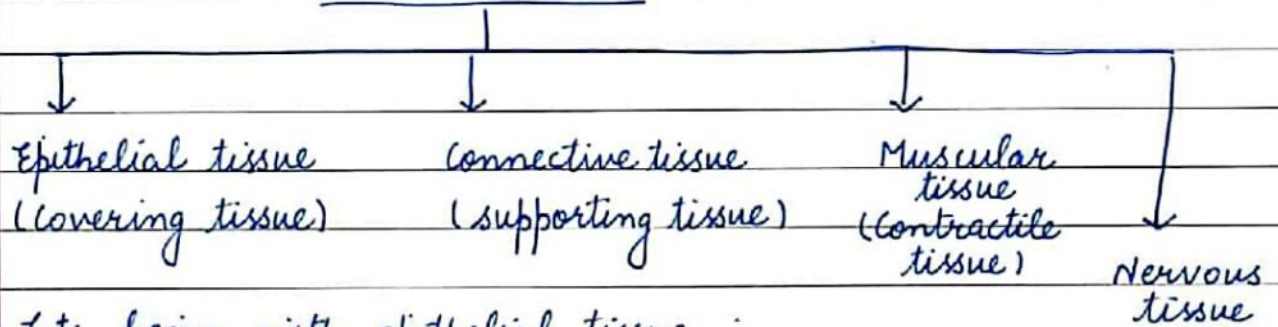


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Animal Tissues



Lets begin with epithelial tissue :

⇒ Epithelium tissue forms the outer protective covering all over the body. It also covers all the body organs. It forms the outermost layer of skin.

⇒ Epithelium forms lining of body cavities like those of mouth, throat, stomach and intestine.

Epithelial tissue is classified on the basis of number of cell layers and also on the basis of cell shapes and functions.

Depending upon shape of the cells the epithelial tissues are of 4 types.

(a) (i) Squamous epithelium - Cells are extremely thin and flat and are arranged edge to edge forming a delicate lining or covering. These cells are usually protective.

(ii) It forms the lining of cavities of ducts and blood vessels, surface of the skin and lining of mouth, oesophagus and nose.

(b) Cuboidal epithelium - Cells are cube like of almost equal height and width.

(ii) Cuboidal epithelium is present in kidney tubules, salivary glands, thyroid gland. These cells are concerned with absorption.

(c) Columnar epithelium - Cells are tall, cylindrical and

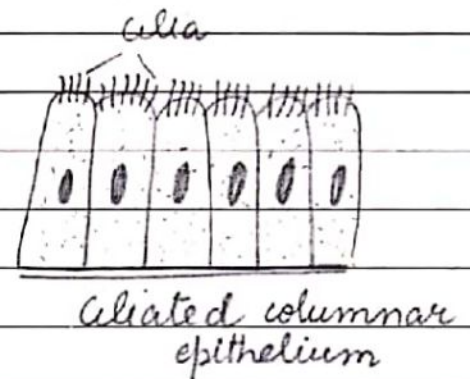
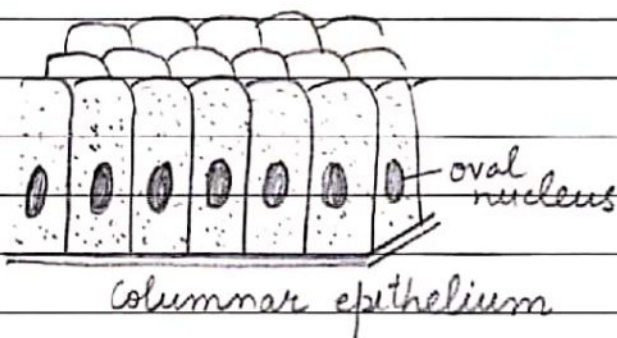
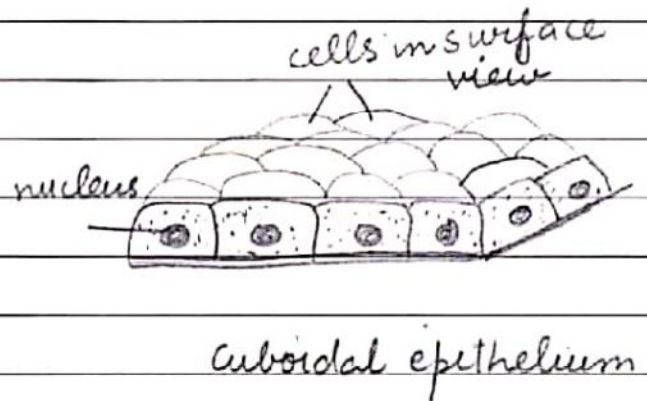
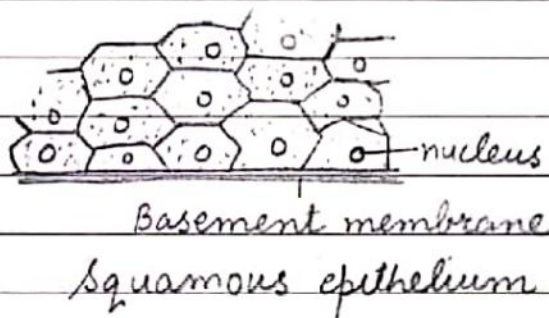
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pillar like. Columnar epithelium lines stomach, intestine, sweat glands and oil glands of the skin. These cells are usually secretory.

- (d) Ciliated epithelium - Ciliated epithelium is modified columnar or cuboidal epithelium. Its cells bear cilia at their free end. Cilia move in rhythmic fashion making the substances to move. It is found in the lining of windpipe and oviduct.



Home assignment

1. Read the chapter till epithelial tissue and do the following questions in your notebook.

Ques1. Difference between xylem and phloem.

Ques2. Name different elements of xylem and phloem.

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Ques 3. Name the plant tissue which is commonly known as wood.

Ques 4. Name four animal tissues.

Ques 5. Name four types of epithelial tissues on the basis of the shape of the cells.

Dear Parents,

You may kindly assist your child in reading the chapter and understanding the study material so that they can understand the concepts and at the same time absorb them well. Your assistance will be highly appreciated.