

STEPPING STONE  
SCHOOL (HIGH)

CLASS :7

**Subject: BIOLOGY**

**Date:1/05/2020**

**Topic: PLANT TISSUE**

**Time Limit: 40 MIN**

## **Worksheet No.:3**

### **COMPLEX PERMANENT TISSUE**

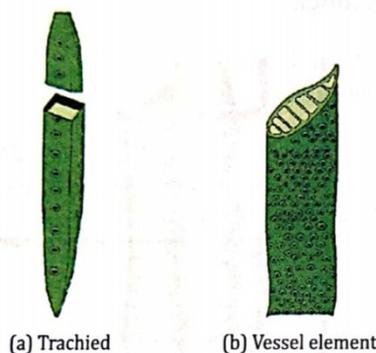


Fig. 1.7 Components of xylem tissue

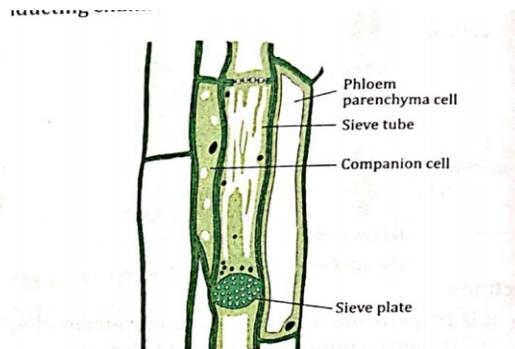


Fig. 1.9 L.S. of phloem tissue

**Complex Permanent tissue** is made up of more than one type of cells which perform together as a unit. Their main function is to conduct water and food materials to the different parts of the plants. Therefore they are also called conducting tissue or vascular tissue.

These tissues are of two types: - **xylem** and **phloem**

**Xylem** conducts water and dissolved minerals from the roots to various parts of the plant. It also provides support to different plant parts.

The xylem consists of four types of cells----**tracheids, vessel elements, xylem parenchyma** and **xylem fibres**. Except xylem parenchyma all others are dead cells

**Phloem** is found in all parts of the plant. It is made up of living tubular cells which provide passage for downward movement of food prepared by the leaves to other parts of the plant.

The phloem consists of **sieve tubes, companion cells, phloem parenchyma and phloem fibres**. Except the phloem fibres all the phloem cells are living in nature.

**Table 1.1** Differences between simple permanent tissue and complex permanent tissue

Simple permanent tissue	Complex permanent tissue
1. This tissue consists of only one type of cells.	1. This tissue consists of different types of cells.
2. The cells of simple tissue are actively dividing in nature.	2. The cells of permanent tissue are dead in nature.
3. They are found throughout the plant body, e.g. epidermis, collenchyma, etc.	3. The complex tissues have restricted presence, e.g. xylem and phloem are found only in vascular bundle of the plant.

*[Copy the questions and solve them on a sheet of paper date wise. Keep the worksheets ready in a file to be submitted on the opening day]*

*Write the answers on the basis of the notes given above*

Q1) What are vascular tissue?

Q2) What are conducting elements of xylem and phloem ?

Q3) Which element of xylem tissue is made up of living cells?

Q4) Which element of phloem tissue is made up of dead cells?

Q5) Differentiate between the following:-

Simple Permanent tissue and Complex Permanent tissue

### Critical Questions:

Q1) Why do cells of Parenchyma tissue have large intercellular spaces?

Ans: The Parenchyma tissues have large intercellular spaces so that gases can diffuse and aerate the roots, stems and leaves. Besides, the mesophyll tissue in the leaves can store water molecules which are required for photosynthesis.

Q2) What will happen if the phloem tissues are damaged or cut?

Ans: Phloem transports food prepared by the leaves to other parts of the plant. If the phloem tissues are damaged or cut, the plants will be deprived of nutrition which will eventually lead to death of the plant.