

Cell and its structure

Question Bank

D1. a. Functions of root

- (i) It fixes the plant firmly to the soil.
- (ii) It helps in carrying water and minerals from the soil to all parts of the plant.
- (iii) It binds the soil particles and prevents soil erosion.

b. Functions of stem

- (i) It keeps the plant upright.
- (ii) It bears branches, leaves, flowers and fruits.
- (iii) It transports water, minerals and the food manufactured by leaves, to all parts of the plant.

c. Functions of leaf

- (i) The main function of the leaf is to prepare food from water and carbon dioxide in the presence of a green pigment called chlorophyll which traps sunlight to provide energy.
- (ii) Leaves are modified to form tendrils that give support to the plant.
- (iii) Leaves are modified to form spines to reduce water loss.

d. Functions of flower

- (i) The flower is the reproductive part of the plant.
- (ii) After pollination, the flower produce seeds which serve to perpetuate the species.

2. Tap roots: A tap root consists of a main root from which a number of branching roots arise. For example, mustard, pea, and so on.
Fibrous roots: A fibrous root consists of a number of thin fibre-like roots arising from the base of the stem. For example, grass, maize, and so on.
3. Experiment to demonstrate the transportation of water in plants:
The stem transports water to all parts of the plant. Cut a balsam plant at the base. Place it in a beaker half-filled with water. Put a few drops of red fountain-pen ink in the water and stir. Let the plant stay in the beaker for a day. Examine it the next day. You will observe thin red lines in the stem and leaves. If the plant has flowers with white petals, we will notice thin red lines

on the petals also. Thus, this activity shows that there are thin tubes present in the stem through which water is transported (or conducted) to all parts of the shoot system.

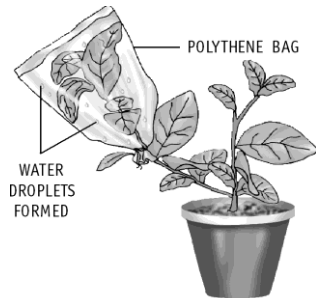


The stem transports water

10

4. Leaves in a *Cactus* plant are modified to form spines to prevent loss of water from the surface of the leaves. The green stem in *Cactus* manufactures food and performs all the functions performed by the leaves in other plants.

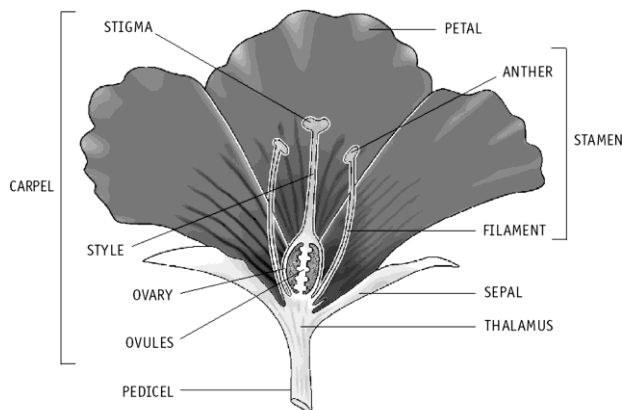
5.



Transpiration in plants

Transpiration helps in cooling down the leaves. As the water escapes from the leaves, the roots pull more water to compensate for this loss. This water brings with it important nutrients required by the plant from the soil.

6.



Structure of a flower