WORKSHEET 2

CHAPTER 5 – TRANSPIRATION

A. Fill in the blanks.

1. Exchange of gases in plants takes place through _____
2. _____ has cooling effects on the leaves.
3. The bean-shaped cells present in stomata are called as _____
4. Lenticels are located on the _____ in place of stomata.
5. The minute pores on the epidermis of the leaf are known as _____

B. Match the items in Column A with those in Column B and write down the matching pairs.

Column A	Column A
1. High rate of transpiration	a. stomata
2. Guttation	b. xylem
3. Movement of water	c. cactus
4. Transpiration	d. maize plant
5. Low rate of transpiration	e. hydathodes

C. Give suitable explanations for the following.

1. Herbaceous plants growing in well-watered soil are found to wilt on a hot day.
2. The leaves of certain plants roll up on a bright sunny day.
3. Rate of transpiration will be more on a windy day rather than on a calm day.
4. Stomata are located more on the ventral side of a leaf.
5. During the day transpiration and photosynthesis are interlinked.

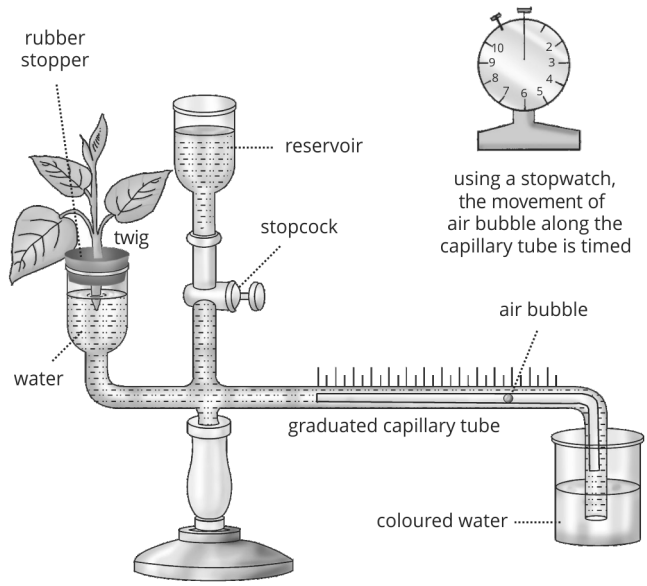
D. Name the following.

1. The experiment to demonstrate transpiration.
2. A chemical normally used to test the rate of transpiration on either side of a leaf.
3. The structure through which guttation takes place.
4. The plant having sunken stomata.
5. A factor which affects transpiration.

Name: ..... Teacher's signature: .....

Class: ..... X ..... Date: .....

E. The diagram of an apparatus given below demonstrates a particular process in plants. Study the same and answer the questions that follow.



1. Name the apparatus.
2. Which phenomenon is demonstrated by this apparatus?
3. Explain the phenomenon mentioned in Q.2 above.
4. State two limitations of using this apparatus.
5. What is the importance of the air bubble in the experiment?

ANSWERS

WORKSHEET 2

A. Fill in the blanks.

1. stomata
2. Transpiration
3. guard cells
4. ventral
5. stomata

B. Match the items in Column A with those in Column B and write down the matching pairs.

1. d. 2. e. 3. b. 4. a. 5. c.

C. Give suitable explanations for the following.

1. On a hot day, the rate of transpiration is more than the rate of absorption of water from the soil. The cells of herbaceous plants loose turgidity and wilt.
2. On a bright sunny day, the rate of transpiration is more than absorption of water. Leaves contain numerous stomata through which transpiration occur. Rolling up of leaves reduces the exposed surface area for transpiration.
3. On a windy day, the water vapour released during transpiration is removed faster from the leaves and the surrounding area becomes unsaturated, water passes out of the plant as water vapour. This enhances the rate of transpiration.
4. To reduce transpiration, stomata are located on the ventral surface of a leaf. The rays of sunlight on dorsal surface of the leaves will cause greater loss of water through stomatal opening.
5. During the day, the cell-sap concentration becomes high due to accumulation of sugar in guard cells as a result of photosynthesis. This results into movement of water into guard cells from neighbouring cells. This makes the guard cells turgid and stomata open.

D. Name the following.

1. Bell jar experiment
2. Cobalt chloride
3. Hydathodes
4. *Nerium*
5. Light

E. The diagram of an apparatus given below demonstrates a particular process in plants. Study the same and answer the questions that follow.

1. Potometer
2. Transpiration
3. Transpiration is the loss of water vapour from the aerial parts of a plant. The rate of transpiration is more during the day time. Transpiration produces a suction force that enables the plants to absorb more water.
4. i. To introduce the air bubble is not easy.

   ii. The position of air bubble may be affected by outside temperature.
5. Air bubble only moves when there is a suction force created that pull the water from the leaves. The reading on the capillary tube would only give the volume of water lost.