

TRANSPORT IN PLANTS

1. (a) define the term transport
(b) Give examples of materials being transported in plants and animals
(c) Name five processes by which materials move in and out of cells.
2. (a) define the term diffusion giving examples where diffusion takes place in organisms
(b) Describe an experiment to demonstrate diffusion using potassium permanganate
(c) Discuss the factors that affect the rate of diffusion
(d) Name the two types of diffusion in organisms
(e) Give the importance of diffusion
3. (a) Define the term osmosis
(b) Describe an experiment to demonstrate osmosis in a non-living material
(c) Describe an experiment to demonstrate osmosis using a living tissue
4. Define the following terms used in osmosis
 - (a) Hypotonic solution
 - (b) Isotonic solution
 - (c) Hypertonic solution
 - (d) Crenation
 - (e) Haemolysis
 - (f) Plasmolysis
 - (g) Turgid
5. Give the significance of osmosis
6. (a) Define the term active transport
(b) What is the significance of active transport?
7. (a) Unicellular and tiny organisms like amoeba and bacteria do not need special transport systems. Explain.
(b) With use of mathematical expressions, show that a small organism has a large surface area to volume ratio than a large organism
8. (a) Name the materials transported in plants
(b) Name the transport parts in plants of the named materials
9. (a) Name the series through which soil water is transported in plants
(b) With the aid of a diagram describe how water is absorbed from the soil by root hair cell
(c) How are root hairs adapted for their function of water absorption?
(d) How is water transported from root hairs to the xylem?
10. Describe how the following forces cause the movement of water up the tall plant in the xylem
 - (a) Root pressure
 - (b) Capillarity
 - (c) Transpirational pull
11. (a) Define the term transpiration
(b) Name the three common types of transpiration
12. Describe an experiment to demonstrate loss of water from leaf surfaces of plants
13. Describe an experiment to show that transpiration occurs mainly through the leaves
14. What are the factors which affect the rate of transpiration
15. Describe the mechanism leading to opening of the stomata
16. Describe an experiment to determine the rate of transpiration
17. Outline the importance of transpiration in plants
18. How are xerophytes adapted to control of excessive water loss