## Transport in plants

## GPLUS EDUCATION

## EXERCISES

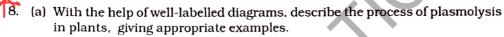
- 1. What are the factors affecting the rate of diffusion?
- What are porins? What role do they play in diffusion?
  - 3. Describe the role played by protein pumps during active transport in plants.
  - 4. Explain why pure water has the maximum water potential.



- 5. Differentiate between the following:
  - (a) Diffusion and Osmosis
  - (b) Transpiration and Evaporation
  - (c) Osmotic Pressure and Osmotic Potential
  - (d) Imbibition and Diffusion
  - (e) Apoplast and Symplast pathways of movement of water in plants.
  - (I) Guttation and Transpiration.



- Briefly describe water potential. What are the factors affecting it?
- 7. What happens when a pressure greater than the atmospheric pressure is applied to pure water or a solution?



- (b) Explain what will happen to a plant cell if it is kept in a solution having higher water potential.
- 9. How is the mycorrhizal association helpful in absorption of water and minerals in plants?
- - 10. What role does root pressure play in water movement in plants?
  - Describe transpiration pull model of water transport in plants. What are the factors influencing transpiration? How is it useful to plants?
  - 12. Discuss the factors responsible for ascent of xylem sap in plants.
  - 13. What essential role does the root endodermis play during mineral absorption in plants?
    - 14. Explain why xylem transport is unidirectional and phloem transport bi-directional.
    - 15. Explain pressure flow hypothesis of translocation of sugars in plants.
  - 16. What causes the opening and closing of guard cells of stomata during transpiration?

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