



## BIOLOGY

### TANSPORT IN PLANTS

#### Exercise

1. What are the factors affecting the rate of diffusion?



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2. What are porins? What role do they play in diffusion?



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3. Describe the role played by protein pumps during action transport in plants.



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4. Differentiate between the following:

Diffusion and Osmosis



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5. Differentiate between the following:

Transpiration and Evaporation



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6. Differentiate between the following:

Osmotic Pressure and Osmotic Potential



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7. Differentiate between the following:

Imbibition and Diffusion



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**8.** Differentiate between the following:  
Apoplast and Symplast pathways of movement  
of water in plants.



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**9.** Differentiate between the following:  
Guttation and Transpiration



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**10.** Briefly describe water potential. What are the factors affecting it?



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**11.** What happens when a pressure greater than the atmospheric pressure is applied to pure water or a solution?



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**12.** With the help of well-labeled diagrams. Describe the process of plasmolysis in plants, giving appropriate examples.



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**13.** Explain what will happen to a plant cell if it is kept in a solution having higher water potential.



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**14.** How is the mycorrhizal association helpful cell if it is kept in a solution having higher water potential.



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**15.** How is the mycorrhizal association helpful in absorption of water and minerals in plants?



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**16.** What role does root pressure play in water movement in plants?



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**17.** Describe transpiration pull model of water transport in plants. What are the factors influencing transpiration? How is it useful to plants?



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**18.** Discuss the factors responsible for ascent of xylem sap in plants.



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**19.** What essential role does the root endodermis play during mineral absorption in plants?



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**20.** Explain why xylem transport is unidirectional and phloem transport bi-directional.



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**21.** Explain pressure flow hypothesis of translocation of sugars in plants.



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22. What causes the opening and closing of guard cells of stomata during transpiration?



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