



HEAD OFFICE

208, CD, LOCAL SHOPPING CENTER
AGGARWAL SHOPPING PLAZA,

BRANCH -1

AYODHYA CHOWK SEC -3
ROHINI

BRANCH -2

DC CHOWK SEC- 9, ROHINI

9TH & 10TH MATHS / SCIENCE
11TH & 12TH – PHYSICS / CHEMISTRY / MATHS / BIOLOGY
EXCLUSIVE BATCH FOR NEET / JEE ASPIRANTS
Ph no. 9696 500 500 / 9696 400 400

Ch- 11 Transport in plant

1. Why are some transport proteins called pumps?

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2. Why does transport reach a maximum or become saturated in facilitated diffusion?

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3. Mention one similarity between transport proteins and enzyme proteins.

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4. What is the unit of water potential?

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

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6. A plant cell is kept in a hypotonic solution. What will happen to the solute potential of this cell?

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7. A plant cell when kept in a certain solution got plasmolysed. What was the nature of the solution?

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8. Why is imbibition considered a method of diffusion?

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9. Mention the different methods by which the substances are transported within plants.

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10. Name any four substances that need to be transported in flowering plants.

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

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

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13. Give the difference between symport and antiport.

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14. How is facilitated diffusion different from simple diffusion?

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15. Describe the role played by protein pumps during active transport in plants.

16. Mention the properties of transport proteins of the membrane.

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17. How is simple diffusion different from active transport?

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18. Explain why pure water has the maximum water potential.

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19. What is pressure potential? How is it represented?

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20. Differentiate between osmotic pressure and osmotic potential.

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21. What causes the opening and closing of stomata during transpiration?

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22. How does transpiration help the plants to maintain the shape and structure of the organs?

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2 marks

23. Differentiate between imbibition and diffusion.

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24. Differentiate between apoplast and symplast pathways of movement of water in plants.

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25. Why does apoplast pathway occur in the root cortex but not in endodermis?

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26. How is mycorrhizal association helpful in absorption of water and minerals in plants?

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

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28. Development of root pressure requires energy Justify.

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29. Differentiate between transpiration and evaporation.

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

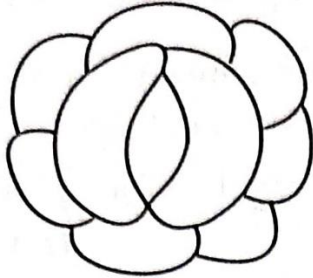
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31. What essential role does the root endodermis play during mineral absorption in plants?

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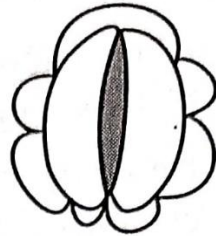
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32. Observe the diagram and answer the following:



(i)



(ii)

- (a) Are these type of guard cells found in monocots or dicots?
- (b) Which of these shows a higher water content (i) or (ii)?
- (c) Which element plays an important role in the opening and closing of stomata?

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33. Explain why xylem transport is unidirectional and phloem transport is bidirectional.

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34. (a) With the help of well-labelled diagrams, describe the process of plasmolysis in plants, giving appropriate examples.

(b) Explain what will happen to a plant cell if it is kept in a solution having higher water potential.

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

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36. Explain pressure flow hypothesis of translocation of sugars in plants.

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37. 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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5 marks

38. In a flowering plant, water, minerals and organic substances like photosynthates, hormones, etc. have to be transported; xylem and phloem are the tissues involved in the transport. In xylem, the transport is unidirectional but in phloem, it is bidirectional.

(a) Give reason why phloem transport is bidirectional.

(b) What term is given to the long distance transport of substances through vascular tissues?

(c) Does xylem conduct only water and inorganic nutrients? Justify.

(d) Indicate the value you learnt from these.

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41. The movement of water upward through xylem in plants occurs at a fairly high rate - 15 m/hr. The question is whether water is 'pushed' or 'pulled' through xylem. Many scientists have found that water is mainly 'pulled'.

- (a) What is the driving force for the pulling of water?
- (b) What is responsible for the pushing up of water? When is it observed? What can be its contribution in water transport?
- (c) What is the value noticed in the process?

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42. Movement of substances through vascular tissues occurs by mass or bulk flow from one part to the other due to the hydrostatic pressure gradient, which may be positive or negative.

- (a) What term is given to bulk movement of substances through vascular tissues?
- (b) What is meant by 'source' and 'sink' in phloem transport?
- (c) What causes the movement of sugar from the source?
- (d) What value is exhibited by mass flow of substances in plants?

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SARASWATI