



BIOLOGY

BOOKS - NTA MOCK TESTS

TRANSPORT OF PLANTS TEST - 1

Multiple Choice Question

1. During the rainy season, doors made of wood generally swell due to

A. Osmosis

B. Imbibition

C. Hydrophobic nature of imbibate

D. Both (B) and (C)

Answer: B



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2. In apoplast pathway, water moves exclusively through the

- A. plasmodesmata.
- B. cell walls.
- C. intercellular spaces.
- D. both (B) and (C)

Answer: D



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3. With increase in the turgidity of a cell surrounded by water the wall pressure will:

A. Increase

B. Decrease

C. Fluctuate

D. Remain unchanged

Answer: A



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4. Movement of ions or molecules in a direction opposite to that of the prevailing electrochemical gradient is known as:

A. Diffusion

B. Active transport

C. Pinocytosis

D. Brownian movement

Answer: B



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5. The type of diffusion in which substances move across the membrane along their concentration gradient in the presence of

certain carriers or transport proteins is called
as

- A. simple diffusion.
- B. facilitated diffusion.
- C. osmosis.
- D. active transport.

Answer: B



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6. Guttation is the result of:

A. Diffusion

B. Transpiration

C. Osmosis

D. Root pressure

Answer: D



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7. Transport of water through the xylem is :

A. Active requiring energy expenditure by the soil.

B. Passive requiring no energy expenditure by the plant.

C. Active requiring no energy expenditure by the plant.

D. Passive requiring energy expenditure by the plant

Answer: B



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8. With reference to the factors affecting transpiration, identify the odd one out.

A. Number and distribution of stomata

B. Water status of plants

C. Canopy structure

D. Wind speed Correct Answer

Answer: D



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9. Facilitated diffusion

A. needs a carrier protein

B. is an active process

C. occurs against the concentration gradient

D. needs ATP

Answer: A



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10. The loss of water in the form of water vapour from the aerial parts of plants is known as:

A. Transpiration **Correct Answer**

B. Guttation

C. Evaporation

D. Transformation

Answer: A



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11. All the following involves osmosis, except:

A. Water entering from soil to root hair

B. Water passing from root hair to adjacent cells

C. Water movement into the xylem vessel element.

D. Water entering a mesophyll cell from xylem vessel element

Answer: C



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12. Plasmolysis is a feature of:

A. Plant cells

B. Animal cells

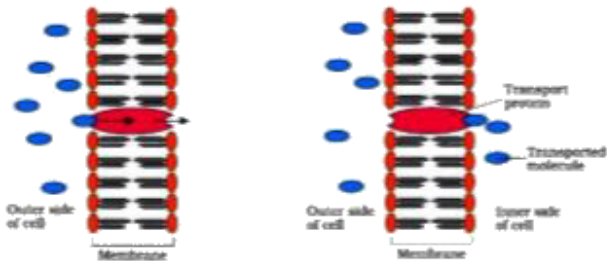
C. Both plant and animal cells

D. Only prokaryotes

Answer: A

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13. Refer to the given figure. What process does it represent?



A. Simple diffusion

B. Facilitated diffusion

C. Osmosis

D. Active transport

Answer: C



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14. Ascent of sap is best explained by

A. mass (bulk) flow

B. pulsation theory

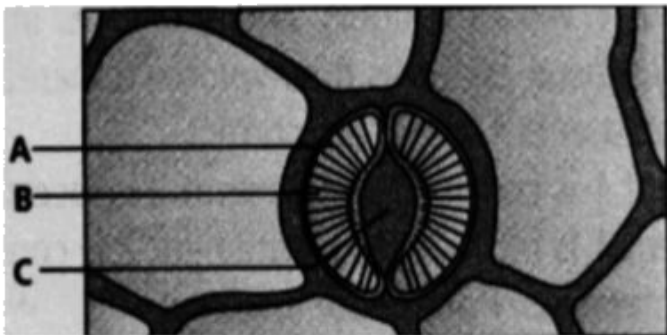
C. root pressure

D. cohesion-tension transpiration pull

Answer: D

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15. Refer to the given figure.



Select the correct statement regarding the labelled parts A-C.

A. The inner wall of B towards C is thick and elastic

B. The opening and closing of the stomata is due to change in the turgidity of B

C. The opening of the stomata is aided due to the orientation of A in the cell walls of

B

D. All of these

Answer: D



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16. When a cell is plasmolyzed, it becomes:

- A. Flaccid and its TP becomes zero
- B. Turgid and its becomes zero
- C. Turgid and TP becomes equal to OP
- D. Flaccid and DPD becomes zero

Answer: A



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17. Which one of the following statements is wrong?

- A. Water potential is the chemical potential of the water
- B. Solute potential is always negative
- C. Pressure potential is zero in a flaccid cell
- D. Water potential equals solute potential in a fully turgid cell

Answer: D



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18. When transport proteins simultaneously move two molecules across a membrane in the same direction, the process is called

A. uniport

B. antiport

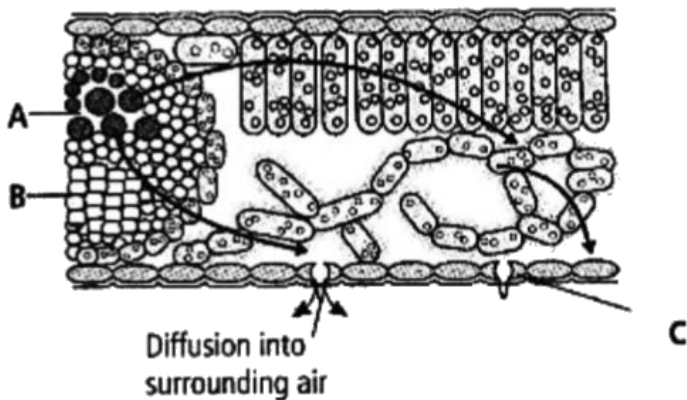
C. symport

D. diffusive port

Answer: C

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19. Refer to the given figure and select the option which correctly identifies A, B and C.



- | | | | |
|----|----------|----------|---------------|
| | <i>A</i> | <i>B</i> | <i>C</i> |
| A. | Xylem | Phloem | Stomatal pore |

- B.

<i>A</i>	<i>B</i>	<i>C</i>
Phloem	Xylen	Stomatal pore
- C.

<i>A</i>	<i>B</i>	<i>C</i>
Phloem	Xylen	Guard cell
- D.

<i>A</i>	<i>B</i>	<i>C</i>
Xylen	Phloem	Guard cell

Answer: D



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20. Match column I with column II and select the correct option from the codes given below.

	Column i		Column II
(a)	Hypotonic	(i)	No net flow of water
(b)	Hypertonic	(ii)	Water moves into the cell
(c)	Isotonic	(iii)	Water moves out of the cell

A. $a - (ii), b - (iii), c - (i)$

B. $a - (iii), b - (ii), c - (i)$

C. $a - (i), b - (ii), c - (iii)$

D. $a - (ii), b - (i), c - (iii)$

Answer: A



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21. Refer to the given table and select the option that correctly fills the blanks in it .

Property	Simple diffusion	Facilitated transport	Active transport
Highly selective	A	Yes	B
Uphill transport	No	C	Yes
Requires ATP	No	D	Yes

- A. *A B C D*
No Yes No No
- B. *A B C D*
Yes Yes Yes No
- C. *A B C D*
No No No Yes
- D. *A B C D*
No Yes Yes Yes

Answer: A



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22. If Ψ_w = water potential, Ψ_s = solute potential, Ψ_p = pressure potential, then select the correct equation showing their inter relation.

A. $\Psi_w = \Psi_s - \Psi_p$

B. $\Psi_w = \Psi_s + \Psi_p$

C. $\Psi_s = \Psi_w + \Psi_p$

$$D. \Psi_w = \Psi_s = \Psi_p$$

Answer: B



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23. The water potential and osmotic potential of pure water are

A. 100 & 0

B. 0 & 0

C. 100 & 100

D. 0 & 100

Answer: B



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24. If some solute is dissolved in pure water, its water potential

A. remains same

B. increases

C. decreases

D. first decreases then increases

Answer: C



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25. A botanist discovered a mutant plant that was unable to produce materials that form Casparian strip. This plant would be

A. Unable to transport water or solutes to the leaves.

- B. Unable to use its sugar as a sugar sink.
- C. Able to exert greater root pressure than the normal plant.
- D. Unable to control amounts of water and solutes it absorbs.

Answer: D



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26. Which of the following is/are pre requisite(s) for imbibition?

(a) Presence of mucilage in the adsorbent.

(b) The affinity between the adsorbent and the liquid.

(c) Water potential gradient between the adsorbent and the liquid.

(d) Presence of cuticle on the surface of the adsorbent.

Choose the correct option from the following

A. (b) and (c)

B. Only (b)

C. (a), (b) and (c)

D. (a) and (d)

Answer: A



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27. Read the following statements and select the correct option.

(i) Pure water has the highest water potential, i.e., zero.

(ii) Process of diffusion does not require any input of energy.

(iii) Water moves from the system containing water at higher water potential to the one having lower water potential.

A. Statements (i) and (ii) are correct

B. Statements (ii) and (iii) are correct

C. Statements (i) and (iii) are correct

D. Statements (i), (ii) and (iii) are correct

Answer: D



28. The given table shows properties of four cells systems A, B, C and D. The maximum rate of inward diffusion of water will be observed in which of these systems?

System	Intracellular concentration of water	Extracellular concentration of water
A	0.09 M	0.11 M
B	0.2 M	0.5 M
C	0.05 M	0.7 M
D	0.03 M	0.6 M

A. B

B. D

C. C

D. A

Answer: C



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29. Amphistomatic leaf, with stomata distributed equally on both the surfaces, is an example of

A. isobilateral leaf Correct Answer

B. dorsiventral leaf

C. xerophytic leaf

D. hydrophytic leaf

Answer: A



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30. The transpiration-driven ascent of xylem sap depends mainly upon ___ property of water.

A. cohesion

B. adhesion

C. surface tension

D. all of these

Answer: D



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