



BIOLOGY

BOOKS - UNIVERSAL BOOK DEPOT

1960 BIOLOGY (HINGLISH)

TRANSPORT IN PLANTS

Transport In Plants

1. The sugarcane plant has

A. Dumb-bell shaped guard cells

B. Pentamerous flowers

C. Reticulate venation

D. Capsular fruits

Answer: A



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2. Some leaves are removed from the stem cuttings planted for vegative propagation.

This is done

- A. To increase water uptake
- B. Because it helps in rooting of cuttings
- C. To reduce water loss
- D. Because the cuttings need less food

Answer: C



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3. Exchange of substances between individual cells and their environments takes place by

A. Osmosis

B. Diffusion

C. Active transport

D. All of these

Answer: D



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4. When a bark of tissue is cut from stem, of which the vascular tissue is removed

A. Xylem

B. Phloem

C. Parenchyma

D. None of these

Answer: B



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5. Best soil for healthy and vigorous growth of a plant is

A. Sandy soil

B. Loam

C. Clay

D. None of these

Answer: B



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6. Soil formed after leaching and rich in Al and Fe is

A. Alluvial

B. Podosol

C. Laterite

D. None of these

Answer: C



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7. Active transport of ions by the cells requires

A. High temperature

B. ATP

C. Alkaline pH

D. Salts

Answer: B



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8. Good soil is

A. Which holds whole of the water that enters into it

B. Which allows percolating the water slowly from it

C. Which allows water to pass very quickly from it

D. Which allows limited amount of water to retain into it

Answer: B



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9. Lenticels and hydathodes are small pores with following common attributes

- A. Their opening and closing is not regulated
- B. They allow exchange of gases
- C. They always remain closed
- D. They are found on the same organ of plants

Answer: A



10. Which of the events is more rapid

- A. Suction of water and minerals due to transpiration pull
- B. Cylosis in cell cytoplasm
- C. Sugar transport in phloem
- D. Distribution of hormones from one part to other

Answer: A



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11. Attractive forces of cell walls for water molecules is termed as

A. Adhesion

B. Cohesion

C. Osmosis

D. Plasmolysis

Answer: A



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12. In trees, death of protoplasts is essential for a vital function such as

- A. Stomatal movements
- B. Both water and food transport
- C. Water transport
- D. Food transport

Answer: C



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13. Which of the following is not a function of water in cell

- A. It provides energy for chemical reaction
- B. It acts as a solvent
- C. It provides a medium for chemical reaction

D. It releases hydrogen ions on ionisation

Answer: A



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14. Active absorption is affected by

A. Osmotic concentration

B. Associate tissue structures

C. Transpiration

D. Sucking capacity of their root

Answer: A



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15. Which one of the following doesn't help in molecule transport

- A. Diffusion
- B. Osmosis
- C. Surface tension
- D. Active transport

Answer: C



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16. Root cap has no function in water absorption, because

A. Its vascular system is not directly connected

B. Its cells are loosely placed

C. It has cells without chloroplast

D. It has no root hair

Answer: D



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17. Water infiltration will be slowest in

A. Black cotton soil

B. Sandy soil

C. Red soil

D. Loamy soil

Answer: A



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18. Meaningful girdling (Ringing) experiments cannot be done on sugarcane because

- A. Phloem is present inside the xylem
- B. It can not tolerate the injury
- C. Vascular bundles are scattered
- D. Plants are very delicate

Answer: C



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19. The amount of water held by the soil after drainage is known as

- A. Mineral water
- B. Soil water
- C. Field capacity
- D. Gravitational capacity

Answer: C



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20. Osmosis is the diffusion of

A. Solute

B. Free energy

C. Water

D. Solute and solvent

Answer: C



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21. The relationship $\pi v = nRT$ is not obeyed by

- A. Concentrated solution
- B. Dilute solution
- C. Extremely dilute solution
- D. All of these

Answer: C



22. That the cell membrane is selectively permeable can be best deduced by

- A. The entry of water from root hair
- B. The entry of mineral salts from the root hair
- C. Both together
- D. The rise of sap in plants

Answer: C



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23. The cell wall is permeable and not a semipermeable structure can be best deduced from the passage of water and mineral salts from

- A. Soil into periplasmic space of root hairs
- B. Root hairs to cortical cells
- C. Cortical cells to pericycle
- D. Pericycle to trachea

Answer: A



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24. What happens when formalin preserved Spirogyra filament is placed in a hypertonic sugar solution

- A. It gains turgidity
- B. It loses turgidity
- C. It becomes plasmolysed
- D. Nothing happens

Answer: D



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25. Selective permeability identifies the process of transmission through semipermeable membrane is called

Or

The movement of water from higher water potential to lower water potential through a semi-permeable membrane is called

Or

Living cells placed in isotonic solution (0.9% saline) retain their size and shape. This is based on the concept of

- A. Diffusion
- B. Osmosis
- C. Plasmolysis
- D. Imbibition

Answer: B



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26. The process of osmosis involves

- A. Movement of solute through semipermeable membrane
- B. Movement of solvent through a semipermeable membrane
- C. Movement of solution through a semipermeable membrane
- D. None of the above

Answer: B



27. The given figures show plasmolysis in a cell. A is a normal turgid cell, B shows incipient plasmolysis and C is a plasmolysed cell. Select the right option in which W, X, Y and Z are correctly identified



A. Shrunken protoplast, Protoplast,
Vacuole, Hypotonic solution

B. Shrunken protoplast, Flaccid protoplast,

Vacuole, External solution

C. Turgid protoplast, Protoplast, Vacuole,

External solution

D. Shrunken protoplast, Protoplast,

Vacuole, External solution

Answer: D



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28. Assume that an actively respiring cell has 3x number of K^+ in its cytoplasm and 2x number of K^+ outside. After sometime, x number of K^+ entered into the cell. What is the process by which K^+ transport has taken place

- A. Primary active transport
- B. Secondary active transport
- C. Diffusion
- D. Passive transport

Answer: B



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29. A RBC and a plant cell (with thick cell wall) are placed in distilled water. The solute concentration is the same in both the cells. What changes would be observed in them

A. Both plant cell and RBC would not undergo any change

B. The RBC would increase in size and burst while the plant cell would remain about the same size

C. The plant cell would increase in size and burst while the RBC would remain about the same size

D. Both plant cell and RBC would decrease in size and collapse

Answer: B



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30. In the process of osmosis

- A. Both protoplasm and cell wall act as a single layer
- B. Only protoplast acts as a single layer
- C. Only cell membrane acts as a single layer
- D. None of the above

Answer: C



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31. A professor kept some moist seeds in an airtight jar and started lecturing. At the end of the experiment an explosion occurred in the jar. What did the professor want to explain

A. Osmosis

B. Diffusion

C. Anaerobic respiration

D. Imbibition

Answer: D



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32. Plant cell plasmolysed in a solution which

is

or

If a cell reduced in size on placing in a solution

of sugar, the solution is

A. Hypotonic

B. Hypertonic

C. Isotonic

D. Concentration no means

Answer: B



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33. Osmosis is defined as the process in which

A. Water diffuses from lower concentration

to higher concentration

B. Solutes diffuse from lower concentration

to higher concentration

C. Active transport of ions takes place

D. Passive transport of ions takes place

Answer: A



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34. Graham's law is correlated with

A. Diffusion

B. Osmoregulation

C. Osmosis

D. Adsorption

Answer: A



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35. The first process by which water enters into the seed coat when a seed is placed in suitable environment for germination is

In seed germination, the first phenomenon take place is

A. Osmosis

B. Active transport

C. Absorption

D. Imbibition

Answer: D



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36. Which of the following experiment is called physiological demonstration of osmosis

A. Thistle funnel - whose mouth is tied with
egg membrane

B. Thistle funnel - whose mouth is tied with
parchment paper

C. Potometer

D. Bell jar experiment

Answer: B



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37. An example of selectively permeable membrane is

- A. Plasmalemma
- B. Cell wall
- C. Mitochondrial membrane
- D. Chloroplast membrane

Answer: A



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38. Plasma membrane controls

A. Passage of water

B. Passage of water and some solutes in
and out of the cell

C. Passage of water and solutes into the
cell

D. Movements of the cell contents out of
the cell

Answer: B



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39. Which plant is used for demonstrating plasmolysis in the laboratory

- A. *Tropeolum*
- B. *Impatiense balsamia*
- C. *Tradescantia*
- D. All the above

Answer: C



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40. Force developed in cortex of root which pushes water into xylem of root from soil

- A. Diffusion
- B. Osmotic pressure
- C. Turgor pressure
- D. Root pressure

Answer: B



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41. Plant cells submerged in distilled water will become

A. Turgid

B. Flaccid

C. Plasmolysed

D. Impermeable

Answer: A



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42. Process of osmosis shall cease when

- A. Solutions become isotonic or DPD becomes equal
- B. Water concentration becomes equal
- C. There is no light
- D. The level of water falls

Answer: A



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43. Which of the following has more imbibition power

A. Cellulose

B. Hemicellulose

C. Fat

D. Protein

Answer: D



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44. Wilting occurs when

A. Rate of transpiration is higher than absorption

B. Rate of absorption is higher than transpiration

C. Excess root pressure

D. High relative humidity in air

Answer: A



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45. When plant cells are kept in a concentrated salt solution, they are

- A. Deplasmolysed
- B. Plasmolysed
- C. Remains as such
- D. Becomes turgid

Answer: B



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46. The initial stage of water absorption by root cells is by

Dry seeds when placed in water swells due to

A. Adsorption

B. Absorption

C. Osmosis

D. Imbibition

Answer: D



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47. The process by which large molecules move out of the cell is called

- A. Plasmolysis
- B. Deplasmolysis
- C. Phagocytosis
- D. Reverse phagocytosis

Answer: D



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48. In the process of plasmolysis

A. Endosmosis occurs

B. Exosmosis occurs

C. Imbibition occurs

D. Diffusion occurs

Answer: B



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49. In the process of osmosis, volume of solvent

A. Increases

B. Decreases

C. Remain same

D. Volume is not related in osmosis

Answer: C



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50. The membrane which allows passage of certain substances more readily than others is termed as

- A. Impereable
- B. Semisolid
- C. Permeable
- D. Selectively permeable

Answer: D



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51. What shall be the sequence of events during wilting of a plant

A. Exosmosis, deplasmolysis, wilting

B. Endosmosis, plasmolysis, wilting

C. Exosmosis, plasmolysis, wilting

D. Endomosis, deplasmolysis, wilting

Answer: C



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52. A plasmolysed cell can be deplasmolysed by placing it in

A. Isotonic solutio

B. Hypertonic solution

C. Saturated solution

D. Pure water or hypotonic solution

Answer: D



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53. What would happen if a thin slice of sugar beet is kept in NaCl

A. It should lose water from the cell

B. It should become turgid

C. It should neither absorbed water nor
lose it

D. It should absorb water from the soil
solution

Answer: A



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54. When a potato piece is kept in a highly concentrated salt solution, then

A. Potato is plasmolysed

B. Potato is deplasmolysed

C. Potato cells get bursted

D. There is no effect due to isotonic solution

Answer: A



55. Osmosis is helpful to plant because

- A. Growth of the young cells is brought about by osmotic pressure and turgor pressure of these cells
- B. Certain turgor moments in plants are determined by osmosis
- C. Both (a) and (b)
- D. None of these

Answer: C



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56. In rainy season, the doors get wet due to

A. Imbibition

B. Absorption

C. Diffusion

D. Endosmosis

Answer: A



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57. Due to plasmolysis, the plant cell

- A. Bursts
- B. Swells up
- C. Becomes turgid
- D. Becomes flaccid

Answer: D



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58. The plant undergoes wilting when

A. Xylem is blocked

B. Cambium is blocked

C. Phloem is blocked

D. Some roots are reduced in number

Answer: A



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59. In some plants, the leaves droop down during day while become normal during night

A. Due to temporary wilting

B. Permanent wilting

C. Both (a) and (b)

D. None of the above

Answer: A



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60. Wilting of a plant results from excessive

- A. Respiration
- B. Photosynthesis
- C. Absorption
- D. Transpiration

Answer: D



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61. The plants face wilting due to use of excessive fertilizers because of

- A. Exosmosis
- B. Endosmosis
- C. Imbibition
- D. None of these

Answer: A



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62. How water rises from the rhizoids of Riccia to its assimilatory filaments ? It is through

- A. Osmosis
- B. Root pressure
- C. Capillary
- D. Transpiration pull

Answer: A



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63. Which of the following seeds will show more imbibitional pressure

A. Til seeds

B. Gram seeds

C. Wheat seeds

D. Rice seeds

Answer: B



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64. Movement of molecules of gases, liquids and solids from a region of higher concentration to a region of lower concentration is termed as

Movement of particles of matter in the cell due to its own kinetic energy is called

- A. Diffusion
- B. Evaporation
- C. Transpiration
- D. Osmosis

Answer: A



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65. During osmosis, water moves through a membrane

A. {("FROM", "TO"),("Lower water potential", "High water potential"):}

B. {("FROM", "TO"),("High solute concentration", "Low solute concentration"):}

concentration"):]}

C. {:(("FROM", "TO"),("High osmotic potential","Low osmotic potential")):]}

D. {:(("FROM", "TO"),("A hypotonic solution (less solute)","A hypotonic solution (more solute")):]}

Answer: D



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66. Incipient plasmolysis is

A. Last stage of plasmolysis

B. Mid stage of plasmolysis

C. Zero hour for inception of plasmolysis

D. Initial stage of plasmolysis

Answer: B



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67. The osmotic parameter determining flow of water from one cell to another is

or

The actual pressure with which water enters into cell is called

- A. Osmotic pressure
- B. Turgor pressure
- C. Diffusion pressure deficit
- D. Hydrostatic pressure

Answer: C



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68. Addition of solute in the cell develops

DPD of a cells mainly depends upon

A. TP

B. OP

C. DP

D. WP

Answer: B



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69. 0.1 M solution of a solute has a water potential of

- A. -2.3 bars
- B. 0 bar
- C. 22.4 bars
- D. +2.3 bars

Answer: A



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70. Root pressure develops due to

- A. Low osmotic potential in soil
- B. Passive absorption
- C. Increase in transpiration
- D. Active absorption

Answer: D



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71. Which of the following statements are true/false

A. The positive hydrostatic pressure is called turgor pressure

B. Wall pressure exerts to prevent the increase of protoplasm size

C. Diffusion is more rapid in liquids than in gases

D. Diffusion of water through a semi-permeable membrane is called imbibition

E. Osmosis is movement of substances which takes place along a diffusion gradient

A. A and B are true & C,D and E are false

B. A and C are true & B, D and E are false

C. A and D are true & B,C and E are false

D. A and E are true & B, C and D are false

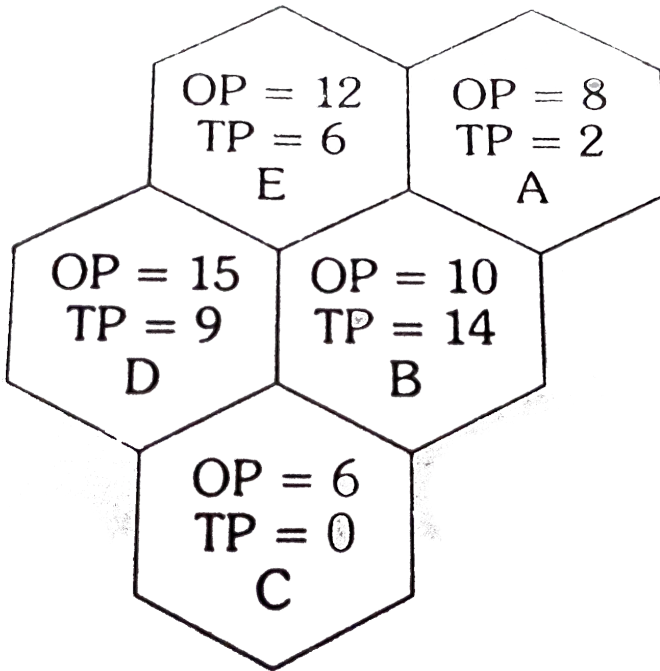
Answer: A



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72. See the following diagram, when the TP of the cell B increases to 18. What changes would

be occur with regard to water movement



A. No movement of water will occurred

B. B actively absorb water from neighbor cell

C. Water diffuses into B from outer cell

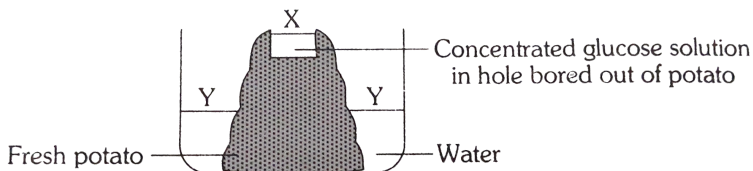
D. Cells A, C, D and E absorb water from B

Answer: D

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73. Observe the following experiment

After a few days, which of the following changes will have occurred



A. A drop in level X and a rise in level Y

B. A rise in level X and a rise in level Y

C. A drop in level X and a drop in level Y

D. A rise in level X and a drop in level Y

Answer: D



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74. Cell A has osmotic potential of -18 bars and pressure potential of 8 bars, whereas, cell B has osmotic potential of -14 bars and pressure

potential 2 bars. The direction of flow of water will be

- A. From cell B to cell A
- B. From cell A to cell B
- C. No flow of water
- D. In both the directions

Answer: B



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75. In hypertonic solution a cell water potential

A. Decreases

B. Increases

C. First increases then decreases

D. No change

Answer: A



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76. In a fully turgid cells, the values of DPD, OP and TP will show the tendency

The cell is fully turgid when

A. $DPD = 10 \text{ atm}$, $OP = 15 \text{ atm}$, $TP = 5 \text{ atm}$

B. $DPD = 5 \text{ atm}$, $OP = 12 \text{ atm}$, $TP = 7 \text{ atm}$

C. $DPD = 2 \text{ atm}$, $OP = 7 \text{ atm}$, $TP = 5 \text{ atm}$

D. $DPD = 0 \text{ atm}$, $OP = 15 \text{ atm}$, $TP = 15 \text{ atm}$

Answer: D



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77. The osmotic potential and pressure potential of three cells (A, B, C) located in different parts of an actively transpiring plant are given below

Identify these three cells as root hair, root cortical and leaf mesophyll cells respectively

Cell	Osmotic Potential (Mpa)	Pressure Potential (Mpa)
A.	-0.87	0.44
B.	-0.92	0.34
C.	-0.68	0.27

A. A, B, C

B. A, C, B

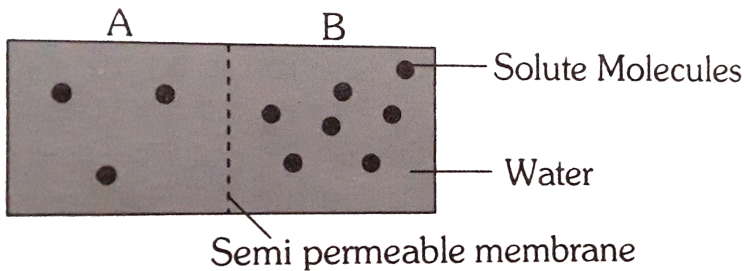
C. C, A, B

D. B, C, A

Answer: C

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78. See the following figure and point out the statement which is not correct



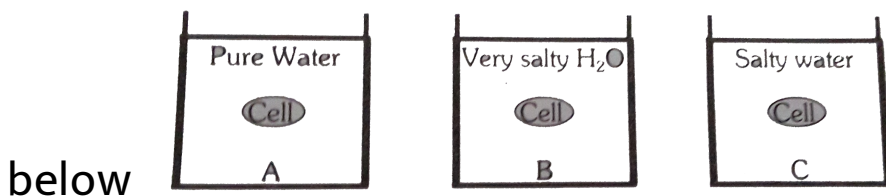
- A. The direction and the rate of osmosis depend upon both the pressure gradient and conc. Gradient
- B. Pressure of a SPM is a prerequisite for this process to occur
- C. Movement of solute will take place from chamber A to B
- D. Movement of solvent molecules will take place from chamber A to B

Answer: C



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79. Select the correct statement for diagram



A. Cell "A" will gain H_2O , Cell "B" will lose

H_2O , Cell "C" neither gain nor loses H_2O

B. Cell "A" will gain H_2O , Cell "B" neither

gain nor loses H_2O , Cell "C" will lose

H_2O

C. Cell "A" neither gain nor loses H_2O , Cell

"B" will gain H_2O , Cell "C" will loses H_2O

D. Cell "A" will lose H_2O , Cell "B" will gain

H_2O , Cell "C" neither gain nor loses H_2O

Answer: A



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80. Two cells A and B are contiguous. Cell A has osmotic pressure 10 atm, turgor pressure-7 atm and diffusion pressure deficit 3 atm. Cell B

has osmotic pressure 8 atm, turgor pressure 3 atm and diffusion pressure deficit 5 atm. The result will be

A. Movement of water from cell B to A

B. No movement of water

C. Equilibrium between the two

D. Movement of water from cell A to B

Answer: D



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81. If water enters in a cell, the pressure exerted by its swollen protoplast is
or

Turgidity of the cells is maintained by

- A. Turgor pressure
- B. DPD
- C. Osmotic pressure
- D. Imbibition

Answer: A



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82. Addition of a solute to pure water causes

- A. Negative water potential
- B. More negative water potential
- C. Positive water potential
- D. More positive water potential

Answer: A



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83. The ratio of osmotic pressure exerted by 1 M sucrose and 1 M NaCl solution will be

A. 1

B. 2

C. 0.1

D. 0.5

Answer: D



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84. When osmotic potential is either zero or negative and pressure potential is positive, then the water potential will be

A. Negative

B. Positive

C. Sometimes negative and sometimes positive

D. None of the above

Answer: A





85. 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: A



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86. What will be the effect of accumulation of K^+ ions in guard cells

- A. Water potential increases
- B. Water potential decreases
- C. Loss of turgidity
- D. Exomosis

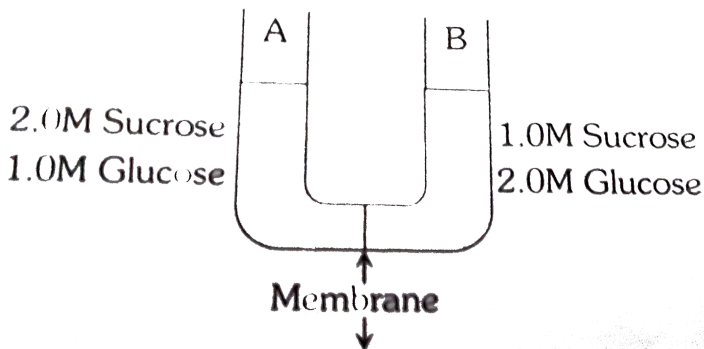
Answer: B



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87. Observe the following figure

After the system reaches equilibrium, Which of the following changes will have occurred



- A. First the level of water is high in tube A and then water level is decreased
- B. No change is observed
- C. The water level is higher in side B than in side A
- D. The water level is higher in side A than in side B

Answer: D



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88. Under given suitable conditions, the DPD will be more than OP

- A. When OP is equal to TP
- B. When OP is less than TP
- C. When OP is greater than TP
- D. When TP is negative

Answer: D



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89. Water is necessary for...

A. Content of protoplasm

B. Solvent

C. Reagent

D. All above

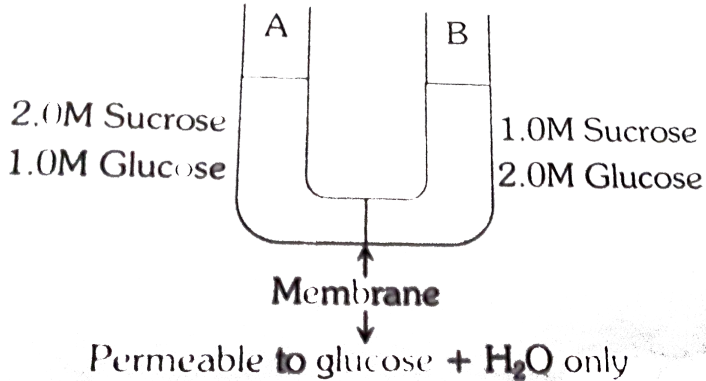
Answer: D



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90. See the following diagram

Initially solution in side A, with respect to side



B, is

- A. Lower
- B. Isotonic
- C. Hypertonic
- D. Hypotonic

Answer: B



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91. Water potential can be obtained by

A. $OP+TP$

B. $OP=WP$

C. $P + \pi$

D. $OP-DPD$

Answer: C



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92. Solute potential of 0.a solution is always

A. 0

B. $gt0$

C. $lt0$

D. Between 0-1

Answer: C



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93. Osmotic pressure of a solution is

A. Greater than pure solvent

B. Less than pure solvent

C. Equal to pure solvent

D. Less than or greater than pure solvent

Answer: A



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94. Identify the correct relationship with reference to water potential of a plant cell.

A. $\psi_w = \psi_m + \psi_s + \psi_p$

B. $\psi_w = \psi_m + (\psi_s - \psi_p)$

C. $\psi_w = \psi_m - (\psi_s + \psi_p)$

D. $\psi_w = \psi_m - \psi_s - \psi_p$

Answer: A



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95. Water potential ψ measured in bar or in

A. $l \frac{b}{\text{cm}^2}$

B. mm of Hg

C. atm

D. All the above

Answer: D



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96. Glucose is not stored in plant due to

A. Decrease in osmotic pressure

B. Increase in osmotic pressure

C. Increase in turgor pressure

D. Decrease in turgor pressure

Answer: B



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97. When osmotic pressure becomes equal to the wall pressure, then

- A. The flow of water will be inside the cell
- B. The flow of water will be outside the cell
- C. Both flow will occur inside as well as outside
- D. There will be no flow

Answer: D



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98. What will be the direction of movement of water, when a solution A having water potential of -9 bars and another solution B of -4 bars is separated by a semipermeable membrane

A. B to A

B. A to B

C. Both directions

D. None of these

Answer: A



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99. Turgor pressure becomes equal to the wall pressure when

- A. Water leaves the cell
- B. No exchange of water takes places
- C. Water enters the cell
- D. Solute goes from the cell into water

Answer: B



100. When a plasmolysed cell is placed in a hypotonic solution then water will move inside the cell. Which force causes this

A. DPD

B. OP

C. WP

D. None of these

Answer: A



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101. When a cell is fully turgid, which of the following will be zero

The potential energy of water is referred to as

- A. Wall pressure
- B. Osmotic pressure
- C. Turgor pressure
- D. Water pressure

Answer: D



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102. When water moves through a semipermeable membrane, which of the following is created

A. OP

B. SP

C. TP

D. WP

Answer: A



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103. Which statement is correct

- A. Osmotic pressure of solution is greater than pure solvent
- B. Osmotic pressure of solution is lower than the pure water
- C. Osmotic pressure of solution is equal
- D. None of these

Answer: A



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104. Which of the following equations is correct in respect of osmotic phenomenon

A. $DPD = OP - TP$

B. $DPD = OP + TP$

C. $DPD = OP \times TP$

D. $DPD = OP / TP$

Answer: A



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105. Transpiration and root pressure cause water to rise in plants by

- A. Pulling and pushing it, respectively
- B. Pushing it upward
- C. Pushing and pulling it, respectively
- D. Pulling it upward

Answer: A



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106. Most widely accepted explanation for the ascent of sap in tree is

A. Capillarity

B. Roll of atmospheric pressure

C. Pulsating action of living cells

D. Transpiration cohesion theory of Dixon

Answer: D



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107. A column of water within xylem vessels of tall trees does not break under its weight because of

- A. Tensile strength of water
- B. Lignification of xylem vessels
- C. Positive root pressure
- D. Dissolved sugars in water

Answer: A



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108. Which of the following is not true for active transport

A. It is a chemical process

B. Energy is required for this process which is obtained in the form of ATP

C. It takes place through special organic molecules called carrier molecules

D. This process is not modified by enzymes

Answer: A



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109. Upward movement of water in plants is called

A. Sucking

B. Ascent of sap

C. Translocation

D. None of these

Answer: B



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110. Water will be absorbed by root hairs when

A. Concentration of salt in the soil is high

B. Concentration of solutes in the cell sap

is high

C. Plant is rapidly respiring

D. They are separated from soil by a

permeable membrane

Answer: B



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111. The factor or process which best explains the rise of water from roots (100 mts) to the top of tall tree is

A. Break down of ATP

B. Root pressure

C. Capillary rise of water xylem

D. Cohesion of water and transpiration pull

Answer: D



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112. The path of water from soil upto secondary xylem is

A. Soil → Root hair cell wall → Cortex

Endodermis → Pericycle →

Protoxylem → Metaxylem

B. Metaxylem → Protoxylem → Cortex

→ Soil → Root hair

C. Cortex → Root hair → Endodermis

→ Pericycle → Protoxylem →

Metaxylem

D. Pericycle → Soil → Root hair →

Cortex → Endodermis → Protoxylem

→ Metaxylem

Answer: A



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113. Physical force theory explains

A. Non-living cells are not essential for ascent of sap

B. Living cells are not essential for ascent of sap

C. Ascent of sap may occur in both living and non-living cells

D. Both (b) and (c)

Answer: A



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114. The rupture and fractionation do not usually occur in the water column in vessel/tracheids during the ascent of sap because of

- A. Weak gravitational pull
- B. Transpiration pull
- C. Lignified thick walls
- D. Cohesion and adhesion

Answer: D



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115. Which of the following would be in insignificant amount in xylem sap

A. Sugar

B. Nitrates

C. Phosphates

D. Water

Answer: A



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116. Bordered pits relating with water uptake located in

A. Cortex

B. Endodermis

C. Vessel elements (Xylem duct)

D. Tracheary elements

Answer: D



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117. Most of the water flow in the root takes place via the apoplast because

- A. Cortical cells are loosely arranged
- B. Cortical cells are living cells
- C. Cortical cells are thin walled cells
- D. All of the above

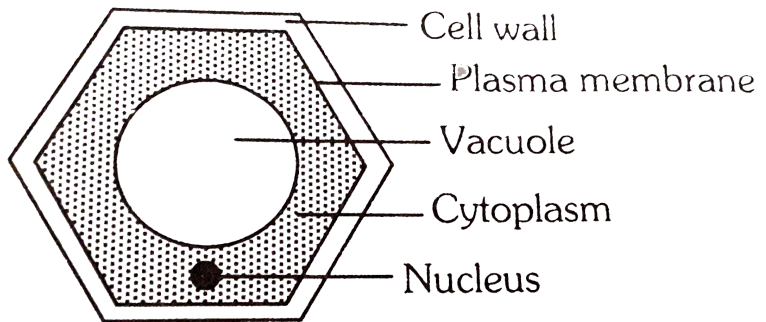
Answer: A



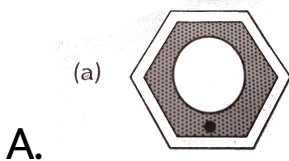
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118. The given diagram shows the appearance of plant cell immersed in a solution which is isotonic to the cell's sap

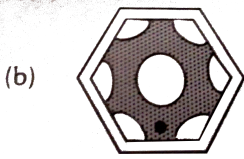
Which of the following diagrams shown below most accurately represents the appearance of this cell after immersion in a hypertonic solution



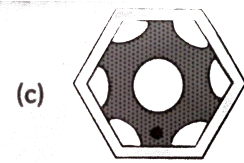
solution



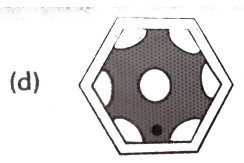
B.



C.



D.



Answer: C



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119. Which of the following helps in the absorption of water and minerals salts

A. Mycorrhiza

B. Anabaena

C. Nostoc

D. None of these

Answer: A



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120. The given diagram indicates routes of transport of water and minerals from the soil

through the root. Identify letters A, B, C and D



A. A - Apoplastic, B- Symplastic, C -
Cellulosic strip, D - Xylem vessels

B. A - Symplastic, B -Apoplastic, C- Cellulosic
strip, D - phloem vessels

C. A - Apoplastic, B - Symplastic, C -
Casparian strip, D - Xylem vessels

D. A - Symplastic, B - Apoplastic, C -

Casparian strip, D - Xylem vessels

Answer: D



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121. The movement of water from one cell of the cortex to the adjacent one in roots is due to

A. Accumulation of inorganic salts in the cells

B. Accumulation of inorganic compounds in the cells

C. Chemical potential gradient

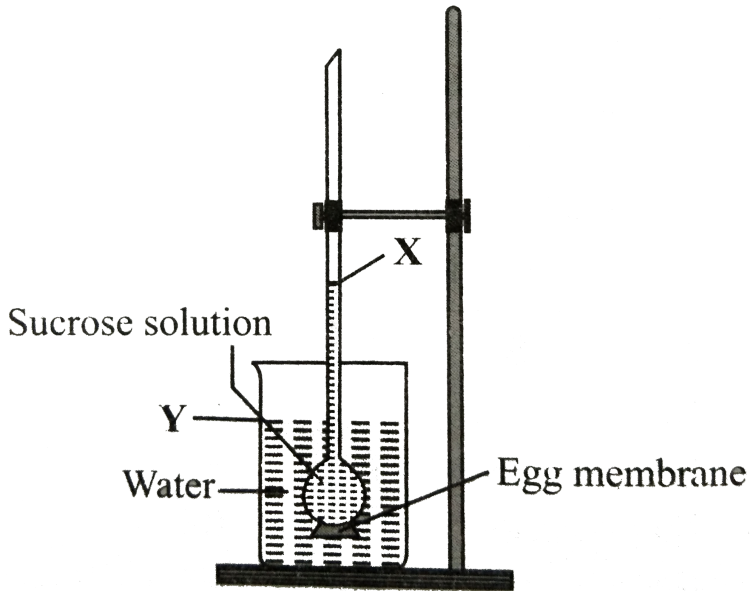
D. Water potential gradient

Answer: D



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122. Given figure represents demonstration of osmosis by egg membrane osmoscope.



After few days which of the following would have occurred?

A. A drop in level X and a rise in level Y

B. A rise in level X and a rise in level Y

C. A drop in level X and a drop in level Y

D. A rise in level X and a drop in level Y

Answer: D



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123. Passage cells are thin walled cells found in

A. Endodermis of roots facilitating rapid

transport of water from cortex to

pericycle

B. Phloem elements that serve as entry points for substances for transport to other plant parts

C. Testa of seeds to enable emergence of growing embryonic axis during seed germination

D. Central region of style through which the pollen tube grows towards the ovary

Answer: A



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124. Movement of H_2O through cell wall is called

- A. Apoplast
- B. Symplast
- C. Tonoplast
- D. None of these

Answer: A



125. If two solutions have the same osmolarity, they are said to be

- A. Hypertonic
- B. Hypotonic
- C. Isotonic
- D. None of these

Answer: C



126. Which of the following statements is/are true

A. The apoplastic movement of water occurs exclusively through the cell wall without crossing any membranes

B. Solutes present in a cell (or in any solution) increase the free energy of water or water potential

C. The symplastic movement occurs from cell to cell through the plasmodesmata

D. Membrane permeability depends on the

membrane composition, as well as the chemical nature of the solute

A. A and B only

B. B and D only

C. A, C and D only

D. A, B and D only

Answer: C



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127. Which of the following statements is incorrect

A. Water and salts are taken

simultaneously by root hairs

B. Plants absorb one thing at a time either

water or inorganic salt

C. Plants absorb excess quantity of water

D. All of the above

Answer: B



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128. Apolplastic movement of water in plants occurs through

- A. Casparian strips
- B. Plasma membrane
- C. Intracellular spaces
- D. Plasmodesmata

Answer: A



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129. When the concentration of the soil solutes is low, the absorption of water

A. Remains normal

B. Is stopped

C. Is increased

D. Is decreased

Answer: C



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130. Simultaneous movement of two molecules across a membrane in the same direction is known as

A. Antiport

B. Symport

C. Uniport

D. Biport

Answer: B



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131. Most accepted theory for ascent of sap is
Sap ascends in woody stems because of root
pressure and

- A. Capillarity theory
- B. Root pressure theory
- C. Pulsation theory
- D. Transpiration pull

Answer: D



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132. Root system in a plant is well developed

- A. Due to deficiency of auxin
- B. Due to deficiency of cytokinins
- C. Due to deficiency of minerals
- D. For increased absorption of water

Answer: D



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133. During absorption of water by roots , the water potential of cell sap is lower than that of

A. Pure water and soil solution

B. Neither pure water nor soil solution

C. Pure water but higher than that of soil solution

D. Soil solution but higher than that of pure water

Answer: A



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134. Storage capacity of the soil is the extent to which it can hold

In soil, water available for plants is

- A. Gravitational water
- B. Capillary water
- C. Hygroscopic water
- D. All of the above

Answer: B



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135. Active transport is characterized by

- A. Requires special membrane proteins
- B. Highly selective
- C. Requires ATP energy
- D. All of the above

Answer: D



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136. The transport of water and salts takes place through

A. Phleom

B. Xylem

C. Sieve tubes

D. Sclerenchyma

Answer: B



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137. The direction of water in the leaflets of *Cycas* from midrib is

A. Lateral

B. Downward

C. Upward

D. Downward and upward

Answer: A



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138. In plants, water supply is due to

A. Osmosis

B. Imbibition

C. Guttation

D. Adhesion force

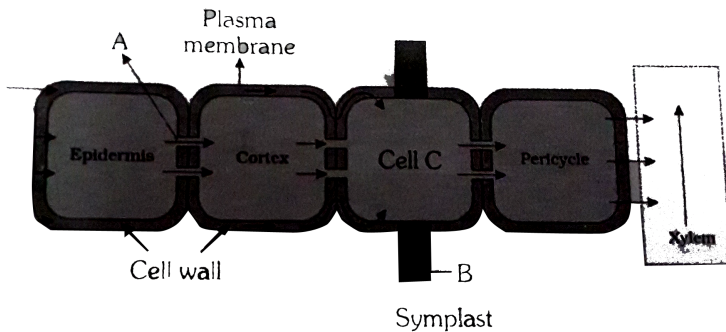
Answer: A



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139. The following diagram represent the pathway of water movement in the root.

Identify A, B, and C respectively



A. Plasmodesmata, Casparian strip, Endodermis

B. Tight junction, Casparian strip, Endodermis

C. Gap junction, Casparian strip,

Endodermis

D. Desmosome, Casparian strip,

Endodermis

Answer: A



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140. The principle pathways by which water is translocated in angiosperm is

- A. Xylem and phloem together
- B. Sieve tubes and members of phloem
- C. Sieve cells of phloem
- D. Xylem vessel system

Answer: D



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141. Passive absorption of water by the root system of the result of

A. Forces created in the cells of the root

B. Increased respiratory activity in root cells

C. Tension on the cell sap due to transpiration

D. Osmosis force in the shoot system

Answer: C



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142. Root hair absorb water from the soil on account of

- A. Turgor pressure
- B. Osmotic pressure
- C. Suction pressure
- D. Root pressure

Answer: C



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143. The ability to rise in thin tubes and Ability to resist a pulling force are respectively referred to as

- A. Tensile strength and capillarity
- B. Adhesion and capillarity
- C. Cohesion and adhesion
- D. Capillarity and tensile strength

Answer: D



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144. Ascent of sap is due to which force

The most Important force which pulls water up in tall trees is

- A. Imbibition
- B. Cellular force
- C. Cohesive force
- D. Atmospheric pressure

Answer: C



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145. When water enters in roots due to diffusion, it is termed as

A. Osmosis

B. Endocytosis

C. Active absorption

D. Passive absorption

Answer: D



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146. Most water absorption in plants takes place through

- A. Root cap
- B. Root apex
- C. Root hair zone
- D. Meristematic zone

Answer: C



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147. Na^+ , K^+ dependent ATPase activity helps in transport of

A. K^+ inward, Na^+ outward

B. K^+ inward only

C. Na^+ inward only

D. K^+ outward, $Na^{(+)}$ inward

Answer: A



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148. The continuous excretion of watery substance from stump of a well watered pot plant after cutting off the shoot slightly above the base is due to

Exudation of xylem is due to

A. Root pressure

B. Guttation

C. Transpiration

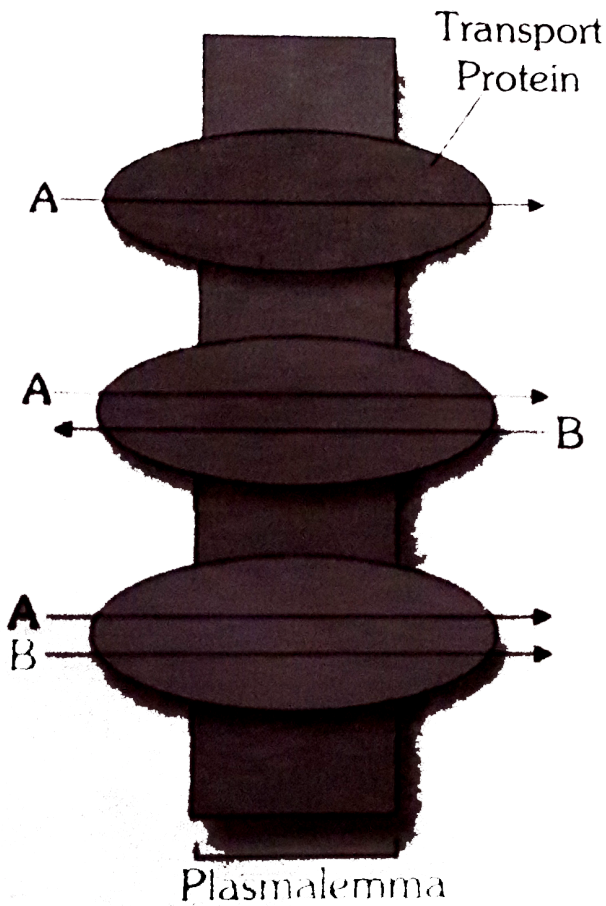
D. Imbibition

Answer: A





149. See the following diagram and identify the process occurring in I, II and III



A. {(I, II, III),(Uniport, Anitport, Symport):}

B. {(I, II, III),(Symport, Co port, Antiport):}

C. {(I, II, III),(Anitport, Uniport, Symport):}

D. {(I, II, III),(Co port, Symport, Antiport):}

Answer: A



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150. Which of the following factors effect the absorption of water by roots

A. Soil temperature

B. Soil aeration

C. RH of the atmosphere

D. All of the above

Answer: D



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151. According to Sachs theory, the ascent of sap takes place

A. In xylem ducts with the help of
imbibition

B. In the phloem with the help of
imbibition

C. In pith with help of imbibition

D. All of the above

Answer: A



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152. The force of tension cohesion exceeds root pressure on a

- A. Rainy day
- B. Foggy morning
- C. Sunny day
- D. Full moon night

Answer: C



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153. Many transplanted seedling may not survive because

- A. They do not like the new soil
- B. They do not get required mineral salts
- C. Most of the root hairs are lost during transplantation
- D. The leaves get damaged

Answer: C



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154. At mid day hours, the xylem sap is in a state of

A. Compression

B. Tension

C. Relaxation

D. Adhesion

Answer: B



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155. Water-logged condition will quickly occur in which type of soil

Holding capacity is highest in

A. Sand

B. Clay

C. Gravel

D. Loam

Answer: B



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156. When a potted plant is flooded with water, the magnitude of root pressure

- A. Increases
- B. Decreases
- C. Remains unchanged
- D. Becomes negative

Answer: B



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157. The chief role of transpiration in plants is to cause

- A. Loss of surplus water
- B. Cooling of the plant
- C. Rapid ascent of sap
- D. Rapid rise of minerals

Answer: C



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158. Guard cells help in

A. Protection against grazing

B. Transpiration

C. Guttation

D. Fighting against infection

Answer: B



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159. In woody trees, the exchange of gases between the outer atmosphere and the internal tissue of the stem takes place through

- A. Aerenchyma
- B. Stomata
- C. Pneumatophores
- D. Lenticels

Answer: D



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160. The number of stomata and epidermal cells in 1 mm^2 leaf area of lower epidermis of the leaves X, Y and Z plants are given below. Arrange the plants in decreasing order of their stomatal index.

The correct answer is

Cell	Numbers of Stomata	Numbers of epidermal cells
X	30	150
Y	60	240
Z	90	400

A. X, Y, Z

B. Y, Z, X

C. Z, Y, X

D. Y, X, Z

Answer: B



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161. Force generated by transpiration can create pressure sufficient to lift water even upto the height of

A. 130 feet

B. 130 metre

C. 230 feet

D. 230 metre

Answer: B



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162. Position and frequency of stomata can be determined by

A. Calculating the loss of water

B. Cobalt chloride paper method

C. Potometer

D. Porometer

Answer: B



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163. In both transpiration and evaporation, water is lost in the form of vapour yet they differ, because

- A. Both transpiration and evaporation are similar but the rate of water loss differs
- B. Frequency of water loss is different in both of them
- C. Transpiration is a physical process and evaporation is a physiological process
- D. Transpiration is a physiological process and evaporation is a physical process

Answer: D



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164. Out of the following, which one is the most common type of transpiration

A. Foliar

B. Stomatal

C. Lenticular

D. Cuticular

Answer: B



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165. Which of the following is not the type of transpiration

- A. Stomatal transpiration
- B. Cuticular transpiration
- C. Lenticular transpiration
- D. Endodermal transpiration

Answer: D



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166. Maximum transpiration occurs in

A. Mesophytic plants

B. Hydrophytic plants

C. Xerophytic plants

D. Algal cell

Answer: A



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167. Transpiration facilitates

A. Electrolyte balance

B. Opening of stomata

C. Absorption of water by roots

D. Excretion of minerals

Answer: C



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168. Transpiration is mainly a process of

A. Osmotic pressure

B. Imbibition

C. Diffusion

D. Respiration

Answer: C



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169. Small (Tiny) particle is placed in the pore of stomata what will be happening

A. It will fall on ground

B. It will stick to lower epidermis

C. It will be accommodate to mesophyll cell

D. It will be accommodate in vascular tissues

Answer: C



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170. Stomata of CAM plants

A. Never open

B. Are always open

C. Open during the day and close at night

D. Open during the night and close during
the day

Answer: D



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171. Transpiration ratio is the ration of moles of H^2O transpired/ moles of CO_2 fixed. This ratio is measure of

- A. The efficiency of guard cells on stomatal movement
- B. Effectiveness of stomata is maximizing photosynthesis while minimizing water loss
- C. Distinguishing a xerophyte from a glycophyte
- D. Stomatal pore size of the leaves

Answer: B



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172. Scotoactive stomata are character of which plants

A. Heliophytes

B. Xerophytes

C. CAM Plants

D. All of these

Answer: C



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173. Which of the following is not a purpose of transpiration

A. Helps in absorption and transport in plants

B. Prevents loss of water

C. Maintains shape and structure of plants by keeping the cell turgid

D. Supplies water for photosynthesis

Answer: B



174. In which type of plants, the stomata remain closed during day time and open during night

A. Photophilous

B. Succulents

C. Sciphilous

D. halophytes

Answer: B



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175. A small mesophytic twig with green leaves is dipped into water in a big beaker under sunlight. It demonstrates

- A. Photosynthesis
- B. Respiration
- C. Transpiration
- D. None of the above

Answer: C



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176. Which of the following plant is able to show rolling of leaf during mid of the day

A. Nerium

B. Melia

C. Amophila

D. All of the above

Answer: C



177. Which of the following plants economises transpirational loss of water

A. C_3

B. C_4

C. Both equally

D. C_2

Answer: B



178. In barely type of plant, the stomata open

A. For few hours during day

B. During night

C. Throughout day and night

D. Remain closed

Answer: A



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179. Stomatal frequency means

- A. No. of stomata per unit area of leaf surface
- B. No. of epidermal cells per unit area of leaf surface
- C. No. of mesophyll cells in the per unit area of leaf
- D. None of the above

Answer: A



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180. Stomatal index I is equal to

A. $\frac{S}{E - S}$

B. $\frac{S}{E + S}$

C. $\frac{E}{E + S}$

D. $\frac{E + S}{E}$

Answer: B



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181. In Vallisneria, stomata are

- A. Present on upper epidermis of leaf
- B. Present on lower epidermis of leaf
- C. Present on both the epidermis of leaf
- D. Not present

Answer: D



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182. In most of the thin leaf mesophytes, the leaf stomata open during day and close night.

It comes under

A. Barely type

B. Potato type

C. Alfalfa type

D. Bean type

Answer: C



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183. Grafted flower is contained in saline water because

A. Suitable nutrient available to flower

B. Flower become fresh in long duration
due to loss transpiration

C. Flower become fresh in long duration
due to regulated osmotic pressure of
flower cell

D. Flower is protected by microbes

Answer: B



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184. Sunken stomata are found in leaves of

A. Trifolium

B. Lemna

C. Nerium

D. Liliium

Answer: C



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185. Which process is favoured by transpiration

- A. Photosynthesis
- B. Conduction of water
- C. Stomatal opening
- D. All the above

Answer: B



186. Stomata is absent in

- A. Submerged plants
- B. Desert plants
- C. Floating plants
- D. All the above

Answer: A



187. The following percentage of water absorbed by herbaceous plants is lost in transpiration

A. 80

B. 60

C. 90

D. 40

Answer: C



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188. Stomata in angiosperms does not open during

A. Noon

B. Twilight

C. 11 O' clock

D. At midnight

Answer: D



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189. Which of the following plants do not transpire

A. Algae

B. Fungi

C. Submerged hydrophytes

D. All the above

Answer: D



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190. Stomata open at night and close during day in

Sunken stomata are adaptations of which category of plants

- A. Xerophytes
- B. Gametophytes
- C. Mesophytes
- D. Hydrophytes

Answer: A



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191. Lenticular transpiration takes place in

- A. Fruits
- B. Woody stems
- C. Leaves
- D. All the above

Answer: B



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192. Which of the following wall of guard cells is thick

A. Outer

B. Inner

C. Side wall

D. All the above

Answer: B



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193. The cells surrounding the stomatal pore are

- A. Guard cells
- B. Subsidiary cells
- C. Chromophil cells
- D. None of the above

Answer: A



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194. Select the correct statement(s) pertaining to transpiration process in plants

A. It is a necessary evil for plants

B. Loss of water takes place through hydathodes in vapour form

C. It may also occur through lenticels

D. The process is active during night in C_3 plants

Answer: A::C



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195. Stomatal movement is not affected by

A. Temperature

B. Light

C. O_2 concentration

D. CO_2 concentration

Answer: C



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196. Stomata in grass leaf are

- A. Dumb-bell shaped
- B. Kidney shaped
- C. Rectangular
- D. Barrel shaped

Answer: A



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197. Due to low atmospheric pressure, the rate of transpiration will

- A. Decrease slowly
- B. Decreases rapidly
- C. Increase
- D. Remain unaffected

Answer: C



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198. Transpiration is minimised by the deposition of

A. Cellulose

B. Pectin

C. Cutin

D. Mucilage

Answer: C



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199. Increase in temperature and velocity of wind cause an increase in transpiration initially but later it slows down, because

- A. Of closure of stomata
- B. Water is not made available
- C. The air around the plant becomes humid
- D. Of mechanical disturbance

Answer: A



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200. Which one of the following will reduce the rate of transpiration

A. Increase in wind velocity

B. Rise in temperature

C. Increase in water uptake by plants

D. Decrease in light intensity

Answer: D



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201. Which of the following is produced during water stress and causes closure of stomata

A. Cytokinin

B. Auxin

C. $GA(- 3)$

D. ABA

Answer: D



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202. The conditions under which transpiration would be most rapid

A. High humidity

B. Excess of water in soil

C. Low humidity, high temperature, guard cells are turgid (open) and moist soil

D. Low velocity of wind

Answer: C



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203. The transpiration in plants will be lowest

A. When there is high humidity in the atmosphere

B. High wind velocity

C. There is excess of water in the cell

D. Environmental conditions are very dry

Answer: A



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204. Which of the following is not a purpose of transpiration

A. Supplies water for photosynthesis

B. Helps in translocation of sugars from source to sink

C. Maintains shape and structure of the plants

D. Cools leaf surfaces

Answer: B





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205. The rate of transpiration directly depends on

- A. Temperature
- B. Negative turgor pressure
- C. Diffusion pressure deficit
- D. Vapour pressure gradient

Answer: D



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206. Which of the following may be used as an anti-transpirant in plant

A. Phenyl mercuric acetate

B. Cobalt chloride

C. Mercury

D. Potassium

Answer: A



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207. Transpiration increases with increase in

- A. Humidity
- B. Temperature
- C. Minerals
- D. Soil moisture

Answer: B



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208. Under what conditions the rate of transpiration increases by

- A. Increase of humidity
- B. Increase of atmospheric pressure
- C. Decrease of temperature
- D. Decrease of humidity

Answer: D



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209. Which would do maximum harm to tree

A. Loss of half of its branches

B. Loss of all of its leaves

C. Loss of all its bark

D. Loss of half of its leaves

Answer: D



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210. Transpiration can be influenced by interfering with

- A. Air temperature
- B. Epidermis of leaf
- C. Guard cell
- D. Osmotic pressure

Answer: A



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211. In the terrestrial habitat which of the following factors affect temperature and rainfall conditions

- A. Translocation
- B. Transformation
- C. Thermo-denaturation
- D. Transpiration

Answer: D



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212. Increase in CO_2 concentration around leaf results in

A. Rapid opening of stomata

B. Parital closing of stomata

C. Complete closure of stomata

D. There will be no effect on stomatal opening

Answer: B



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213. Cobalt chloride method was first used by

A. F. Darwin (1912)

B. Stahl (1894)

C. Curtis (1926)

D. Leibeg (1840)

Answer: B



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214. Which one of the following is not an antitranspirant

A. PMA

B. BAP

C. Silicon oil

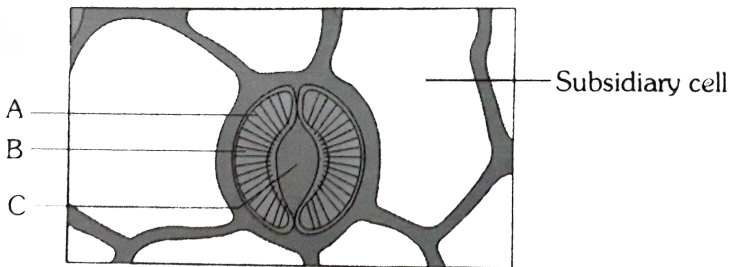
D. Low viscosity

Answer: B



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215. Observe the diagram of stomatal apparatus. In which of the following all the three parts labelled as A, B and C are correctly identified



A. A - Guard cell, B - Stomatal aperture, C -

Microfibril

B. A - Stomatal aperture, B - Guard cell, C -

Microfibril

C. A - Microfibril, B - Guard cell, C - Stomatal aperture

D. A - Microfibril, B - Stomatal aperture, C - Guard cell

Answer: C



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216. Stomata on the surface of the leaf, open by

A. Decreasing the solute concentration in the guard cells

B. Increasing the solute concentration in the guard cells

C. Weakening of the cell walls of the guard cells to allow them to stretch

D. Increasing the water potential in the guard cells

Answer: B



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217. When stomata closes which of the following events does not occur

- A. Guard cell become flaccid
- B. Sugar is converted to starch
- C. O.P of the guard cell decreases
- D. Accumulation of O_2 takes place

Answer: D



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218. Select the correct events leading to the opening of the stomata

(i) Decline in guard cell solutes

(ii) Lowering of osmotic potential of guard cells

(iii) Rise in potassium levels in guard cells

(iv) Movement of water from neighbouring cells into guard cells

(v) Guard cells becoming flaccid

A. (i) and (v) only

B. (ii), (iii) and (iv) only

C. (i), (iii) and (iv) only

D. (ii), (iv) and (v) only

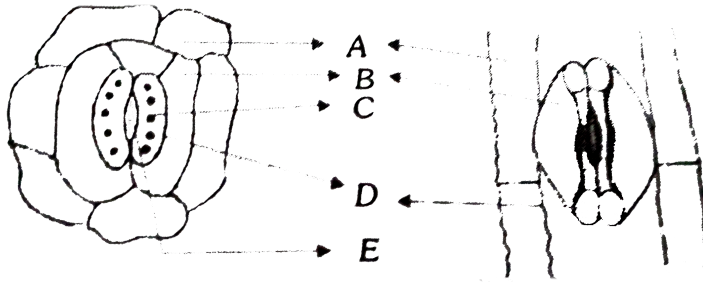
Answer: B



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219. Choose the correct combination of labelling of stomatal apparatus of dicot and

monocot leaves



A. A = epidermal cells, B = subsidiary cells, C = chloroplast, D = guard cells, E = stomatal aperture

B. A = epidermal cells, B = guard cells, C = chloroplast, D = subsidiary cells, E = stomatal aperture

C. A = epidermal, B = subsidiary cells, C = chloroplast, D = stomatal aperture, E = guard cells

D. A = subsidiary cells, B = epidermal cells, C = chloroplast, D = stomatal cells, E = guard cells

Answer: A



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220. Which of the following essential elements plays an important role in opening and closing of stomata?

A. Iron Fe^+

B. Magnesium Mg^{2+}

C. Zinc Zn^+

D. Potassium K^+

Answer: D



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221. Conversion of starch to organic acid is essential for

- A. Stomatal closure
- B. Stomatal opening
- C. Stomatal initiation
- D. Stomatal growth

Answer: B



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222. Clarification of mechanism of opening and closing of guard cells is based on which of the following theory

- A. Entry and exit of potassium in guard cell
- B. Photosynthetic process taking place in guard cell
- C. Starch- sugar conversion
- D. Transpiration

Answer: A



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223. Stomata open during day time because the guard cells

- A. Photosynthesize and produce osmotically active sugars or organic acids
- B. Are thin-walled
- C. Are bean shaped
- D. Have to help in gaseous exchange

Answer: A



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224. Stomatal opening or closing is due to

A. Change in the turgidity of guard cells

B. The inner wall of each guard cells is thick
and elastic

C. Cellulose microfibrils of guard cells are
oriented radially

D. All of the above

Answer: D



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225. According to the Steward's starch hydrolysis theory, which one of the following is the principle reason for the opening of stomata during daytime

- A. Influx of K^+ ions into guard cells under the influence of ABA hormone
- B. Conversion of sugar into starch in guard cells
- C. Efflux of K^+ ions from guard cells under the influence of ABA hormone
- D. Photosynthetic utilization of CO_2 in guard cells

Answer: D



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226. Basis of stomatal opening is

A plant cell attains turgidity due to

Turgor pressure of a plant cell increases due to

A. Exosmosis

B. Endosmosis

C. Decrease in cell sap concentration

D. Plasmolysis of guard cells

Answer: B



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227. Which of the following theories is not related to the opening of stomata

A. Sachs

B. K^+ transport

C. Korper-Kappa theor

D. Levitt theory

Answer: C



228. Na^+ / K^+ pump in a cell is an example of

- A. Osmosis
- B. Diffusion
- C. Passive transport
- D. Active transport

Answer: D



229. Stomatal opening and closing due to the permeability of the guard cell. This face was revealed by

A. Von Mohl

B. Linsbauer

C. Lloyd

D. Mansfield

Answer: B



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230. Stomatal open in the daytime due to

- A. Increase in water potential
- B. Decrease in water potential
- C. Decrease in pH
- D. Light

Answer: B



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231. Which of the following statement is not true for stomatal apparatus

A. Guard cells invariably possess

chloroplasts and mitochondria

B. Guard cells are always surrounded by

subsidiary cells

C. Stomata are involved in gaseous

exchange

D. Inner walls of guard cells are thick

Answer: B



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232. Stomatal mechanism operates in response to

A. Temperature

B. Light

C. Soil moisture

D. Atmospheric humidity

Answer: B



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233. Levitt explanation for stomatal action is due to

- A. Increase in sugar content of guard cells
- B. Variatons in pH value
- C. Starch is converted into organic acids

D. Light causes opening and darkness closure

Answer: C



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234. The primary osmolite which causes an opening and closing of stomata is

A. Sugars

B. Starch

C. K-malate

D. Water

Answer: C



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235. In guard cells when sugar is converted into starch, the stomatal pore

A. Opens fully

B. Opens partially

C. Closes completely

D. Remains unchanged

Answer: C



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236. Which of the following theory gives the latest explanation for the closure of stomata

A. ABA theory

B. Munch theory

C. Starch glucose theory

D. Active K^+ transport theory

Answer: D



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237. Glycolate induces opening of stomata in

A. Presence of oxygen

B. Low CO_2 concentration

C. High CO_2 concentration

D. Absence of CO_2

Answer: B



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238. In plants opening of stomata is regulated by

A. Red light

B. Blue light

C. Far-red light

D. Ultraviolet light

Answer: B



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239. Guttation is caused due to

A. Imbibition

B. Osmosis

C. Positive root pressure

D. Transpiration

Answer: C



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240. Guttation usually occurs when the plant is put

- A. In more saturated atmosphere
- B. In more humid soil
- C. In dry condition
- D. In deserts

Answer: A



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241. Which of the following is not a controlled process

- A. Transpiration
- B. Guttation
- C. Both (a) and (b)
- D. None of the above

Answer: B



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242. From active hydathodes, the water comes out by

A. Osmotic pressure

B. Secreted by force developed within cells themselves

C. By root pressure

D. None of the above

Answer: C



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243. Root pressure develops due to

A. Passive transport

B. Gravitation

C. Active transport

D. None of these

Answer: C



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244. Which one of the following is not related to guttation

A. Water is given out in the form of droplets

B. Water given out is impure

C. Water is given out early morning

D. Guttation is of universal occurrence

Answer: D



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245. The process of the escape of liquid from the tip of uninjured leaf is called

A. Evaporation

B. Transpiration

C. Guttation

D. Evapo-transpiration

Answer: C



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246. Guttation is the process of elimination of water from plants through or Guttation occurs from or The pores in leaves through which water comes out in the form of droplets are called or A specialized multicellular

structure in leaves which excretes water droplets is called as

- A. Stomata
- B. Hydathodes
- C. Lenticels
- D. Wounds

Answer: B



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247. Guttation is found mostly in

A. Herbaceous plant

B. Shrubs

C. Wood plants

D. None of these

Answer: A



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248. Water is lost in a liquid state in some plants through hydathodes. These hydathodes

- A. Remain closed at night
- B. Remain closed during day
- C. Remain always open
- D. Do not show any specificity in opening and closing

Answer: C



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249. Epithem is

- A. Loosely arranged mass of parenchyma in hydathodes
- B. Large intercellular spaces of hydathodes
- C. Xylem elements of hydathodes
- D. Phloem below the air hydathodes

Answer: A



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250. Guttation occur in

A. Morning

B. Noon

C. Evening

D. Morning 10 O' clock

Answer: A



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251. Hydathodes are also called

- A. Water stomata
- B. Sunken stomata
- C. Guard cells
- D. Subsidiary cells

Answer: A



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252. Which one is not related to transpiration

A. Regulation of plant body temperature

B. Absorption and distribution of mineral salts

C. Circulation of water

D. Bleeding

Answer: D



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253. Which of the following is responsible for passive guttation

- A. Tension-cohesion of water molecules
- B. Activity of epithem tissue
- C. Osmotic acitvity of root hairs
- D. Secretion of fluid by mesophyll cells

Answer: C



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254. Which of the following is more during the night

A. Root pressure

B. Absorption

C. Evaporation

D. Transpiration

Answer: A



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255. Ultrafiltration theory for permeability of cell membrane was put forth by

A. Traube

B. Ruhland

C. Sachs

D. None of these

Answer: B



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256. Pressure bomb technique was used by

A. Scholander et al

B. Kramer et al

C. Dixon et al

D. None of the above

Answer: A



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257. Who proposed the retention pressure theory for the permeability of the membrane

A. Traube

B. Overton

C. Cocking

D. None of these

Answer: A



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258. Match the theories given in column I with the names of scientists listed in column II. Choose the answer which gives the correct combination of the alphabets

Column - I (Names of theories)		Column - II (Names of scientists)	
A.	Relay pump theory	p.	Stocking
B.	Transpiration cohesion theory	q.	Sir J.C. Bose
C.	Mass flow	r.	Godlewski
D.	Pulsation theory	s.	Dixon and Jolly
		t.	Ernst Munch

A. A = r, B = s, C = t, D = q

B. A = s, B = r, c = p, d = q

C. A = r, B = q, C = t, D = q

D. A = q, B = p, C = t, D = r

Answer: A



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259. Who explained the scotoactive opening of stomata

A. Nishida

B. Palls

C. Ehrler

D. None of the above

Answer: A



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260. Theory of starch-glucose interconversion was proposed by

Enzyme phosphorylase is first of all discovered in guard cells by

A. Yin and Tung

B. Zelitch

C. Imamura

D. None of the above

Answer: A



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261. For photoactive opening of stomata, the proton transport concept was given by

A. Levitt

B. Milborrow

C. Ziegler

D. None of the above

Answer: A



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262. According to one vital force theory, ascent of sap is due to active pulsation of innermost layer of cortex. This theory was given by
In plant 'transpiration pull' theory for ascent of sap was first proposed by

A. J. C. Bose

B. Dixon

C. Strasburger

D. Sacks

Answer: A



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263. The scientist, who proposed that production of glycolic acid in guard cells is an important factor in stomatal opening, is

A. Kumar

B. Steward

C. Zelitch

D. Lewitt

Answer: C



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264. Guttation' word is given by

A. Fritz

B. Burgerstein

C. Noggle

D. Lewitt

Answer: B



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265. Who studied the effect of light on translocation

A. De Vries

B. Blackman

C. Williams

D. Hart

Answer: D



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266. "There is no translocation at low temperature" has been invented by

A. Swanson and Whitne

B. Fenson

C. Spanner

D. Munch

Answer: A



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267. Potometer works on the principle of

A. Amount of water absorbed equals the amount transpired

B. Osmotic pressure

C. Root pressure

D. Potential difference between the tip of
the tube and that of the plant

Answer: A



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268. Who had said that "transpiration is a
necessary evil"

A. Curtis

B. Steward

C. Anderson

D. J. C. Bose

Answer: A



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269. Osmoscope is used for

A. Measuring OP

B. Measuring TP

C. measuring psi

D. Demonstration of osmosis

Answer: D



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270. Which of the following is used to determine the rate of transpiration in plants

A. Porometer

B. Potometer

C. Auxanometer

D. Tensiometer

Answer: B



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271. The term water potential was proposed by

A. Boseq

B. Dixon

C. Godlewski

D. Slatyer and Taylor

Answer: D



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272. Potometer and clinostat are used to study

A. Photosynthesis and respiration

B. Transpiration and growth

C. Phototropism and geotropism

D. Transpiration and geotropism

Answer: D



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273. Darwin's potometer determine

- A. Comparison of stomatal and cuticular transpiration
- B. Transpiration and absorption ratio
- C. Opening of stomata

D. None of these

Answer: C



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274. The best vital force theory was proposed
by

A. Godlewsky

B. Strasberger

C. Dixon

D. Esau

Answer: A



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275. Who has used two bulbs of semipermeable membrane to explain pressure flow theory

Gradient pressure was given as a possible mechanism of translocation of food by

A. Munch

B. Jones

C. Spanner

D. Fenson

Answer: A



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276. The shot pressure is measured by

A. G. M. Counter

B. Luxmeter

C. Pressure bomb technique

D. Bomb calorimeter

Answer: C



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277. Who proposed that the upward and downward movement of materials take place

A. sacks

B. boehm

C. dixon

D. curtis

Answer: d



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278. The direction of the conduction of food through phloem is

A. from below upwards

B. from top to bottom

C. from leaves to roots

D. phloem never conducts food

Answer: c



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279. In which form the food is translocated from endosperm to plumule of a fatty seed like castor.

A. Fatty acids

B. Fat

C. Glucose

D. Sucrose

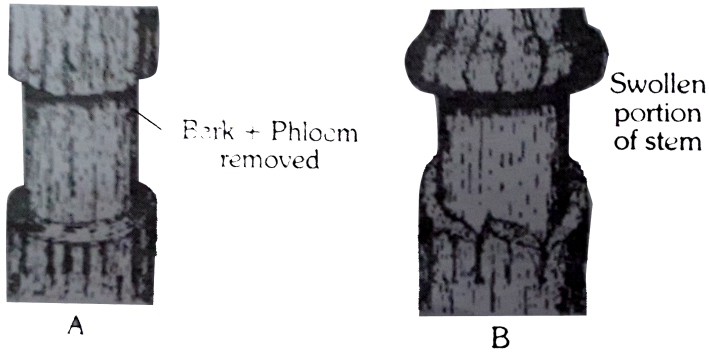
Answer: d



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280. The figure indicates the ringing or girdling experiment. Bark having phloem is removed. This experiment proves that phloem is the path for translocation of food. In this

experiment swollen part of stem has been shown. The possible cause of this swollen is



A. Injured parts undergo turgidity

B. a repairing mechanism is taken place

C. Accumulation of water and mineral just above the ring

D. Accumulation of food material just above the ring (as downward movement of food is inhibited)

Answer: D



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281. phloem sap is mainly made of

A. water and sucrose

B. water and minerals

C. oligosaccharides and hormones

D. sucrose only

Answer: a



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282. The absorption of food is phloem is

A. Basipetal

B. Acropetal

C. Both a and b

D. none of these

Answer: a



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283. The food stored in the ripening fruit is derived from

A. roots

B. farthest leaves

C. nearest leaves

D. aerial stem

Answer: c



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284. In cell transport the difference between permeable transport and bulk transport relates to

A. structure of molecules allowed to pass through

B. solvent system as well as structure of molecules are applicable

C. solvent system is applicable

D. molecular weight of atoms allowed to pass through

Answer: a



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285. Sinks are related to

A. Transport of minerals

B. Stomate

C. Enzymes

D. Phytochrome

Answer: a



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286. Consider the following statements with reference to facilitated transport

A. Requires ATP energy

B. Transport saturates

C. Highly selective

D. Requires special membrane properties

E. Uphill transport

of the above statements.

A. A, B and C, are relevant but D and E are irrelevant

B. B, C and E, are relevant but A and D are irrelevant

C. C,D and E are relevant but A and B are irrelevant

D, A, D, and E are relevant but B and C are irrelevant

Answer: d



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287. Bidirectional translocation of minerals takes place in

Or By many evidence, it can be known that the downward movement of food takes place through

A. Xylem

B. Phloem

C. Parenchyma

D. Cambium

Answer: b



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288. Leaf photosynthates are transported to other parts of higher plants through

Or

Food is transported to various parts of the plant through

A. Cambial cells

B. Pith cells

C. Xylem cells

D. Phloem cells

Answer: D



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289. Which is correct about transport or conduction of substances

A. organic food moves upwardly through

B. Organic food moves up through phloem

C. Inorganic food moves upwardly and downwardly through xylem

D. Organic food moves upwardsly and downwardly through phloem

Answer: d





290. During transport of sugar or amino acid through cell membrane

A. Na^+ ions move against the direction of concentration gradient

B. Na^+ ions move in both directions irrespective of its concentration gradient

C. No net Na^+ ions movement

D. Na^+ ions move in the direction of its concentration gradient

Answer: a



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291. By protoplasmic streaming theor, how sugar is translocated from one sieve tube to other.

A. Diffusion

B. Osmosis

C. Absorption

D. Active transport

Answer: a



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292. Supply ends in transport of solute are

A. Green leaves and storage organs

B. Root and stem

C. Xylem and phloem

D. Homones and enyme

Answer: a



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293. The movemenbt of materials through the vascular tissue of plants is called.

A. Tranpiration

B. Translocation

C. Transcription

D. Transduction

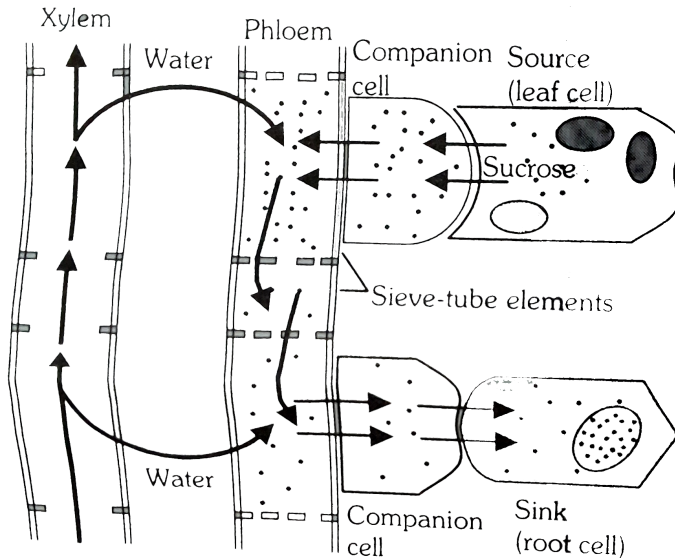
Answer: b



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294. According to all Munch's pressure-flow hypothesis, which of the following given conditions would increase the rate of

translocation.



A. A decrease in the photosynthesis

B. An increase in the sucrose production at
the source

C. A decrease in phloem unloading at the
sink

D. An increase in the humidity in the outside air

Answer: b



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295. Active transport of solute in plants refers to flow of solutes against a concentration gradient and therefore requires input of energy. This energy is derived.

A. Always from hydrolysis of ATP

B. Not only from ATP hydrolysis but also from the collapse of a proton motive force

C. Partly from the input from ATP hydrolysis and partly from the collapse of a proton motive force

D. From the different sources depending on the solutes

Answer: a



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296. When a plant is girdled or in a ring girdled plant

- A. The root dies first
- B. The shoot dies first
- C. The root and shoot die at the same time
- D. Neither the root nor the shoot will die

Answer: a



297. carbohydrates synthesized in the leaves are transported through sieve tubes most commonly in the form of

Or

Translocation of sugar in flowering plants occurs in the form of

A. Glucose

B. Triose sugar

C. Sucrose

D. Soluble starch

Answer: c



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298. Starch is insoluble in water yet it is accumulated in large quantities in potato because

A. It is synthesised in potato tuber itself

B. It is translocated from the leaves to the potato tuber in the form of sugar

C. Soil micro-organism deposit starch in tuber

D. It is useful consumption

Answer: b



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299. According to much theory, the cause of flow of soluble substances is

A. Protoplasmic flow

B. Mass flow due to reduction in turgor pressure

C. Diffusion

D. None of these

Answer: b



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300. The translocation of organic solutes in sieve tube members is supported by

- A. Mass flow involving a carrier and ATP
- B. Cytoplasmic streaming
- C. Root pressure and transpiration pull
- D. P-proteins

Answer: d



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301. Who proposed blood like translocation of solutes

A. Spanner

B. munch

C. Williams

D. Jones

Answer: b



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302. Organic substances such as sugars are translocated in the phloem. It can be demonstrated by

- A. Defoliation
- B. Ringing the stem
- C. Grafting
- D. Root pressure

Answer: b



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303. Vein loading is the active transport of sugars from

- A. Mesophyll cells to vessels
- B. Vessels to mesophyll cells
- C. Mesophyll cells to sieve tubes
- D. Sieve tubes to mesophyll cells

Answer: c



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304. Much hypothesis is based on

A. Translocation of food due to TP gradient
and imbibition force

B. Translocation of food due to Turgor
Pressure (TP) gradient

C. Translocation of food due to imbibition
force

D. None of these

Answer: b



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305. Which one of the following elements is necessary for the translocation of the sugars in plants

A. Iron

B. Manganese

C. Molybdenum

D. Boron

Answer: d



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306. Which of the following is the main point in disfavour of Munch theory

A. Translocation is a pure physiological process

B. Translocation is a pure physical process

C. Explanation of sugar transport is not given

D. None of these

Answer: c



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307. Which of the following criteria does not pertain to facilitated transport

A. Uphill transport

B. Requirement of special membrane proteins

C. High selectivity

D. Transport saturation

Answer: a



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308. Which of following statements does not apply to reverse osmosis?

A. It is used for water purification

B. In this technique, pressure greater than osmotic pressure is applied to the

system.

C. It is a passive process

D. It is an active process

Answer: c



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309. Which one of the following will not directly affect transpiration?

A. Temperature

B. Light

C. Wind speed

D. Chlorophyll content of leaves

Answer: d



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310. The lower surface of leaf will have more number of stomata in a

A. Dorsiventral leaf

B. Isobilateral leaf

C. Both a and b

D. None of the above

Answer: a



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311. The process of guttation takes place

A. When the root pressure is high and the rate of transpiration is low

B. When the root pressure is low and the rate of transpiration is high

C. When the root pressure equals the rate of transpiration

D. When the root pressure as well as rate of transpiration are high

Answer: a



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312. Which of the following is an example of imbibition?

- A. Uptake of water by root hair
- B. Exchange of gases in stomata
- C. Swelling of seed when put in soil
- D. Opening of stomata

Answer: c



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313. Water potential of pure water at standard temperature is equal to

A. 10

B. 20

C. Zero

D. None of the above

Answer: c



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314. Match the following and choose the correct option

- | | |
|---------------------|---------------------------------|
| A. Leaves | i. Anti-transpirant |
| B. Seed | ii. Transpiration |
| C. Roots | iii. Negative osmotic potential |
| D. Aspirin | iv. Imbibition |
| E. Plasmolyzed cell | v. Absorption |

Options

A. $A - iii$ $B - iv$ $C - i$ $D - ii$

B. $A - i$ $B - ii$ $C - iii$ $D - iv$

C. $A - iii$ $B - ii$ $C - iv$ $D - i$

D. $A - iii$ $B - i$ $D - iv$

Answer: b



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315. Mark the mismatched pair.



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316. Purple cabbage leaves do not lose their colour in cold water but do so in boiling water because

A. Plasma membrane get inactivated in boiling water

B. Hot water can enter the cells readily

C. The pigment is not soluble in cold water

D. The cell wall is killed in boiling water

Answer: a



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317. Primary and secondary active transport both

A. Generates ATP

B. Use ATP directly

C. Can move solutes against their concentration gradient

D. Include the passive movement of glucose molecule

Answer: c



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318. When a plant cell is placed in a solution which is hypotonic to the cell sap, which of the conditions will not apply

A. The water potential of the cell sap will rise

B. The suction pressure of the cell sap will fall

C. The cell become turgid

D. The wall pressure of the cell fail

Answer: d



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319. 0.5M sucrose solution develops a pressure of 15 force in an osometre . Which of the following statement is wrong for such a solution

- A. That its osmotic potential is-15 bars
- B. That its water potential-15bars
- C. That its preesure potential is -15bars

D. That its osmotic pressure is +15 bars

Answer: c



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320. A cell when dipped in 0.5 M sucrose solution has no effect but when the same cell will be dipped in 0.5 M NaCl solution the cell will

A. Increase in size

B. Decrease in size

C. Will be turgid

D. Will get plasmolysed

Answer: b



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321. In which of the following plants would metabolism be hindered if the leaves are coated with wax on their upper surface

A. Hydrilla

B. Lotus

C. Pistia

D. Vallisneria

Answer: b



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322. An osmometer is filled with 0.5 M solution of NaCl in water. In which of the following

solutions it must be immersed in order to make it shrink

A. 0.5 M solution

B. 0.05 M solution

C. Distilled water

D. 0.75 M solution

Answer: d



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323. In water-logged soil, plants do not grow properly because

A. The soil is physiologically dry

B. The soil is physiologically wet

C. Due to excessive water

D. Due to shortage of water

Answer: a



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324. Turgidity in guard cells is controlled by

A. Chloride

B. Malic acid

C. Potassium

D. Potassium, chloride and malic acid

Answer: d



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325. Root pressure is maximum when

A. Transpiration is high and absorption is very low

B. Transpiration is very low and absorption is high

C. Transpiration is very high and absorption is also high

D. Transpiration and absorption both are slow

Answer: b



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326. In which of the following the rate of transpiration is high

A. CAM plants

B. C_3 plants

C. C_3 and C_4 plants

D. C_4 plants

Answer: b



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327. A thin film of water, held by the soil particles under the influence of internal attractive force, is called which of the following water

- A. Capillary
- B. Combined
- C. Hygroscopic
- D. Gravitational

Answer: c



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328. A sufficient atmospheric pressure required to push the water upto the top of tall plants must be

A. 2 atm

B. 6 atm

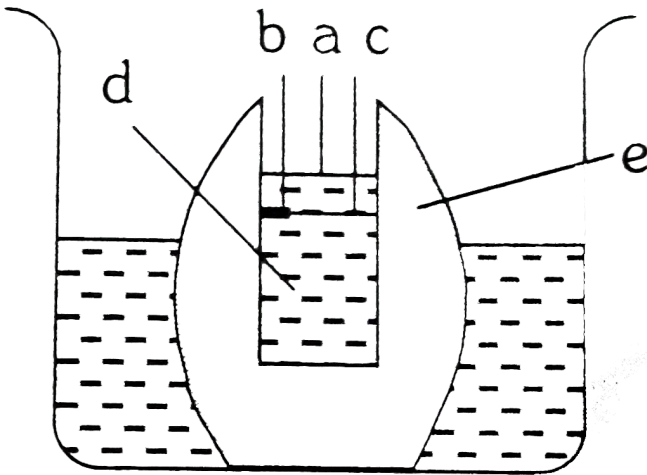
C. 20 atm

D. All of the above

Answer: c



329. Choose the correct combination of labelling of the potato osmoscope experiment



- A. a-final level, b-dotpin, c-initial level, d-sugar solution, e-potato tuber

B. a-initial level, b-dotpin, c-final level, d-
water, e-potato tuber

C. a-final level, b-dotpin, c- initial level, d-
water, e-potato tuber

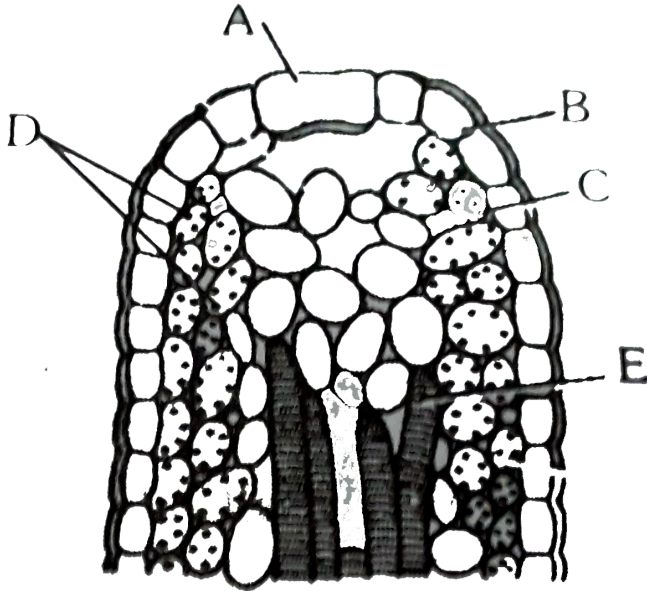
D. a-final level, b-dotpin, c-final level, d-
water, e-container

Answer: a



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330. Choose the correct combination of labelling of hydathode



A. A-guard cells, B-epithem, C-mesophyll, D-epidermis, E-vasculature

B. A-guard cells, B-epidermis, C-mesophyll,

D-epithem, E-vasculature

C. A-ostiole, B-epidermis, C-mesophyll, D-

epithem, E-vasculature

D. A-water pore, B-hypodermis, C-mesophyll,

D-epithem, E-vasculature

Answer: c



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331. The removal of a ring of bark from trunk of a tree eventually kills it, since

A. Mineral salts cannot go up

B. Water cannot go up

C. Food does not travel down and roots are starved

D. The exposed part becomes infected with fungi

Answer: c





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332. Where does transpiration cohesion pull theory works

- A. Active absorption
- B. Inactive absorption
- C. Active and inactive absorption
- D. None of these

Answer: b



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333. The speed of water absorption will be greater if

A. The difference between osmotic pressure of soil water and that of xylem vessels is always more

B. The difference between osmotic pressure of soil water and that of xylem vessels is always more

C. The osmotic pressure of soil water is always more than that of xylem vessels

D. The osmotic pressure of soil water is always less than that of xylem vessels

Answer: b



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334. During absorption of H_2O by roots, the H_2O potential of cell sap is lower than that of

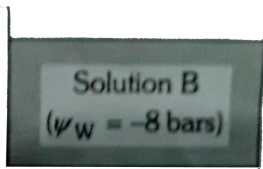
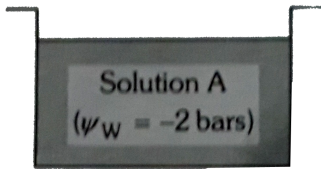
- A. Solution outside
- B. That of pure H_2O
- C. One
- D. None of these

Answer: b



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335. See the following figure and select the correct option



A. Water potential has nothing to do with

K.E. of water in a solution

B. K.E. of water in A solution = K.E. of H_2O in

B solution

C. K.E. of water in B solution $>$ K.E. of

water in A solution

D. Kinetic energy (K.E.) of H_2O in A solution

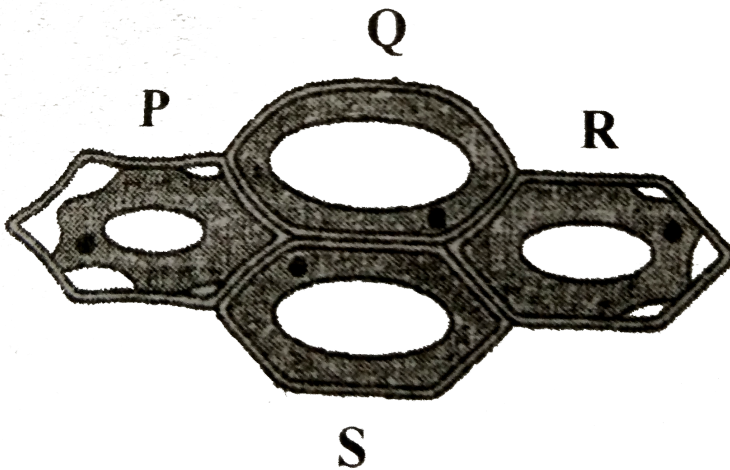
$>$ K.E. of water in B solution

Answer: d



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336. Which out of the four plant cells (*P*, *Q*, *R* and *S*) would not exhibit any wall pressure?



A. R and S

B. P and R

C. Q and S

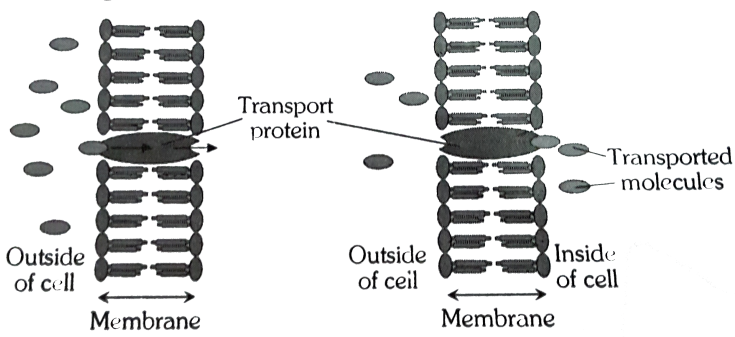
D. P and Q

Answer: b



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337. The given diagram shows the transportation of materials by



- A. Secondary active transport
- B. Primary active transport
- C. Facilitated diffusion
- D. Simple diffusion

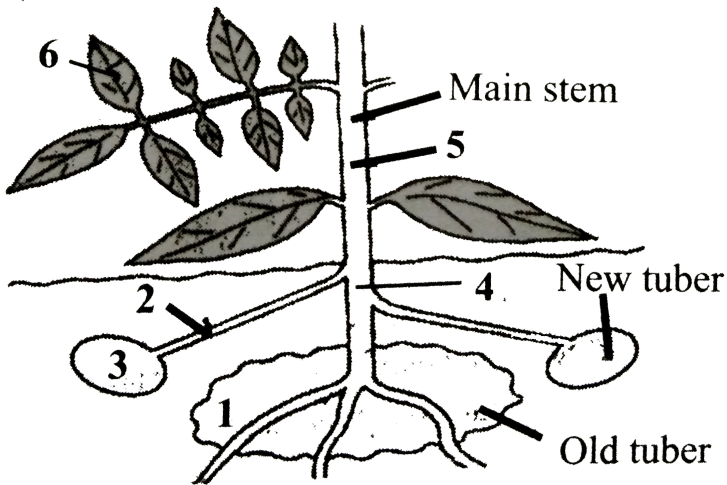
Answer: c



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338. The given diagram shows a potato plant forming new tubers.

Which route would be taken by most of the food at this time



A. 6 → 5 → 4 → 1

B. 1 → 4 → 5 → 6

C. $6 \rightarrow 5 \rightarrow 2 \rightarrow 3$

D. $1 \rightarrow 4 \rightarrow 2 \rightarrow 3$

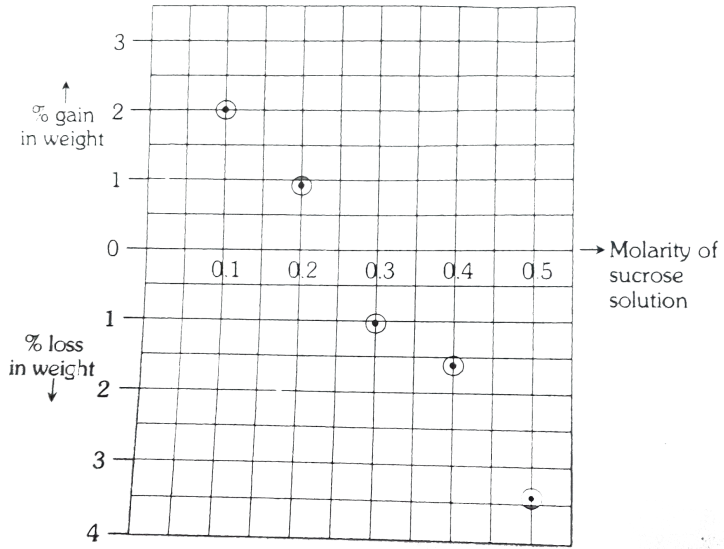
Answer: c



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339. From these results it can be concluded that the water concentration of potato cell sap is approximately equivalent to that of a sucrose

solution of molarity



A. 0.50

B. 0.35

C. 0.25

D. 0.10

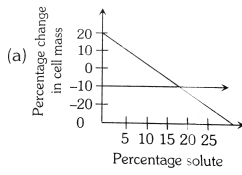
Answer: c



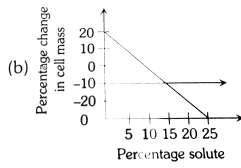
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340. The effect of solute concentration of the mass of tissue cells is studied. It is observed from the collected data that the tissue cells were isotonic to 10 % solute concentration. Which of the following graph represents that the cells are isotonic 10 % solute concentrations

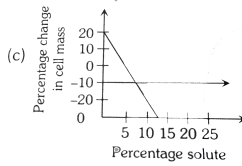
A.



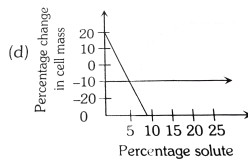
B.



C.



D.



Answer: c



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341. Which of the following is not correct is mass flow hypothesis



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342. Water vapour comes out from the plant leaf through the stomatal opening . Through the same stomatal opening carbon dioxide diffuses into the plant during photosynthesis Reason out the above statements using one of following options





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343. Specialised epidermal cells surrounding the guard cells are called



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344. Assertion : Xylem is principal water conducting tissue.

Reason : It has been recognised by girdling or ringing experiment



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345. Assertion : Water and mineral uptake by root hairs from the soil occurs through apoplast until it reaches endodermis.

Reason : Mature sieve tubes have parietal cytoplasm and perforated sieve plates.



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346. Assertion : long distance flow of photoassimilates in plants occurs through sieve

tubes.

Reason: mature sieve tubes have parietal cytoplasm



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347. Assertion : Arid areas are not suitable for crops

Reason: Antitranspirants are used for planting crops in arid regions.



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348. Assertion : Oil will form a film on the top of the water affecting the amount of light entering the water.

Reason : Oil is a polar molecule, and forms hydrogen bonds.



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349. Assertion: Film forming chemical should not be used for cheking transpiration.

Reason: film forming chemicals interrupt photosynthesis and respiration.



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350. Assertion : Stomata are "turgor operated volves"

Reason: Stomata shown reversible turgor changes.



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351. Assertion: Wilting occurs due to to loss in turgidity.

Reason: Turgor pressure checks the excessive entry of water into cells.



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352. Assertion: Temporary and permanent wilting result in plant death.

Reason: Plant parts become flaccid in wilting condition.



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353. Assertion: Seeds and spores do not lose the viability in unfavourable periods.

Reason: Seeds and spores have high osmotic pressure.



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354. Assertion : To counteract the increases in turgour pressure in plant cells, the cell wall produces an equal and opposite pressure, i.e. , wall pressure .

Reason : When plant cells undergo endomosis, they swell but do not burst.



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355. Assertion : Plasmolysis will be severe if the process is in the order, limiting → incipient → evident.

Reason:Plasmolysis is exosmosis.



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356. Assertion: Water absorption is reduced by lowering O_2 tension.

Reason : The accumulation of CO_2 reduces water absorption.



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357. Assertion: Upward movement of water is called ascent of sap.

Reason: Upward movement of water occurs through xylem and phloem.





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358. Assertion:Plants absorb water mostly by roots.

Assertion:Root cap region participates actively in water absorption.



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359. Assertion:Field capacity is maximum in loam soil.

Reason: In water logging condition, the soil has maximum field capacity.



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360. Assertion: Only vertical movement of water is possible through xylem and tracheids.

Reason: The xylem ray parenchyma is responsible for the lateral transport of water.



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361. Assertion:Light is very important factor in transpiration.

Reason:It induces stomatal opening and darkness closing.Therefore, transpiration increases in light decreases in dark .



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362. Assertion:Waxy and cutin coating on plant parts reduce the transpiration.

Reason: These adaptations are found in xerophytes.



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363. Assertion: Water in liquid form reaches to plant surfaces in transpiration process.

Reason: At plant surface, water changes from liquid to vapour phase.



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364. Imbibition

- A. Both diffusion and capillary action
- B. only diffusion
- C. only capillary action
- D. none of the above

Answer: a



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365. In the process of osmosis

A. both cell wall and protoplasm will act as
a membrane

B.

C. only outermost layer of protoplasm act
as a membrane

D. only cell wall act as a membrane

Answer: c



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366. Osmotic Pressure

A. Xerophytes

B. Lithophytes

C. halophytes

D. Mesophytes

Answer: c



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367. In which part of the plant water is stored

A. roots

B. stem

C. leaves

D. bark

Answer: c



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368. Which of the following is done during ringing experiment

- A. bark is removed
- B. pith is removed
- C. xylem is removed
- D. all of these

Answer: d



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369. The most abundant intracellular cation is



Answer: a



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370. Which of the following statement is/are not true

(A). In CAM plants stomata open during dark and remain closed during the day

(B). Role of Na^+ in stomatal opening is now universally accepted

(C). The water potential of roots cells is higher than the water potential of soil

(D). Capillarity theory is the most accepted theory of water movement through plants.

(E). The walls of xylem vessels are made up of

ligno-cellulose have strong affinity for water molecules

A. B,C and E only

B. B, C and D only

C. A and E only

D.

Answer: b



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371. Match the column I and with column II

Column I

1. Bulliform cells
2. Guard cells
3. Lenticel
4. Subsidiary cell

Column II

- A. Stomata
- B. Aerating pore
- C. Accessory pore
- D. Isobilateral leaf

A. 1-D,2-A,3-B,4-C

B. 1-A,2-D,3-B,4-C

C. 1-D,2-B,3-C,4-A

D. 1-A,2-B,3-C,4-D

Answer: a



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372. Guttation only occurs in

- A. Hydrophytes
- B. mesophytic herbs
- C. Mangroves
- D. marshy plants

Answer: b



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373. Which is the most important precaution to be observed in finding out of the rate of transpiration through ganong's potometer

A. A broad leaf plant need to be selected

B. The experimental shoot should be obliquely cut

C. The shoot should be cut under water.

D. Apparatus to be filled with water.

Answer: c





374. In the resting state of the neutral membrane, diffusion due to concentration gradients, if allowed would drive.

A. Na^+ into the cell

B. Na^+ out of the cell

C. K^+ into the cell

D. K^+ and Na^+ out of the cell

Answer: a



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