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Class - X

Sub - Bio

Board - CISCE

Chapters - Absorption by Roots
and Transpiration

Pages - 4

CLASSMATE

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G1>

i) At the tip of the leaf vein.

ii) Osmosis.

iii) Ganong's Potometer.

9 1/2

iv) Turgor pressure is more compared to the wall pressure,
due to which ^{the cell} ~~it~~ cannot withstand it and bursts.

v) Active Transport.

vi) Bleeding.

vii) Cuticle layer.

viii) It is found surrounding the stomata below the
stomatal area on the lower epidermis of the leaf.

ix) Lenticels.

x) Soil water and root hair, endodermis, cortical also
xylem.

G2>

excess

ii) Upon addition of fertilizers, the surrounding soil
will be more concentrated than the cell sap present in
the root hair. Due to this ~~excess~~ occurs and the
a hypertonic solution is formed.

Q

cell cell of the water from the root hair moves outwards (into the soil) and the cell shrinks turning flaccid. The water moves into a higher solute concentrated solution.

→ to the higher solute.

- i) xerophytes modify their leaves into spines as to reduce the surface area provided by the leaves. This thereby reduces transpiration and the plant can thereby adapt to the harsh hot environment.

- ii) Upon rolling up the leaves, the exposure of the leaves to the bright sun is minimized. Therefore, transpiration reduces and the plant can easily perform photosynthesis as the guard cells won't turn turgid. flaccid.

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Q3)

- i) Below the surface of the leaf (in the lower epidermis)



- ii) Stomata.



- iii)

A) CHLOROPLAST GUARD CELL

5

B) STOMATA



- iv) It helps in ^{the} photosynthesis opening and closing the stomata

ab

- v)

1) Thick and thin guard cells.



2) Turgidity.



vii) Guard transpiration is the loss of excess water in the form of water vapour from the leaves and other aerial parts of the plant.

viii) 5 epidermal cells are found surrounding this structure.

4)

i) Elaccid ~~X~~

ii) Cell membrane/ Plasma membrane.

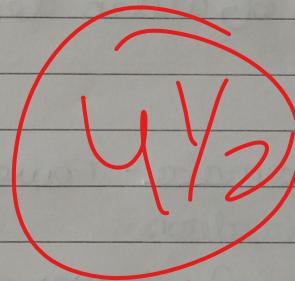
iii)

1> CELL WALL ✓

2> WATER ?

3> CELL MEMBRANE ✓

4> NUCLEUS ✓



iv) If the cell is placed in water, it can be brought back to its original condition. The term is de-plasmolysis.

v)

1> freely permeable membrane (cell wall)

2> ~~Do~~ Rigidity structure provided by the cell wall.

3> De-plasmolysis can only occur in plant cells.

4> Large vacuole contains vacuole.

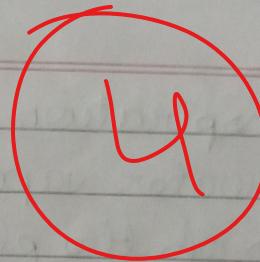
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5>

CLASSMATE
Date :
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i) Transpiration.

Oil was added in the water to prevent evaporation of water.



ii) The weight of the plant decreases; i.e. the initial weight of the plant is heavier than the final weight.

iii)

a) The level of water remains unchanged or it slightly decreases.

b) The level of water decreases.

iv)

1> Fewer stomata - Fewer stomata will decrease the rate of transpiration.

2> Thick cuticle - Leaves will contain thick cuticle on their surfaces to reduce loss of water by transpiration.

3> Rolling / folding of leaves - Rolling or folding of leaves reduces the exposure of their surface to the sun, thereby reducing transpiration.

a, b, c