WATER RELATIONS IN PLANTS

1. Water movement is fast in

1) Living cells 2) Intercellular spaces

3) Xylem vessels 4) Dead cells

2. The upward movement of water against gravitation force in plants is

1) Capillary rise 2) Translocation 3) Absorption 4) Ascent of sap

3. Ascent of sap is movement of water from

1) Soil into Xylem 2) Xylem into leaves

3) Xylem into atmosphere 4) Leaves into atmosphere

4. Cohesion - Tension theory based on

I : Decrease in water potential in mesophyll cells

II : Transpiration pull

III : Water potential gradient between soil solution and xylem

IV : Unbroken water column

1) I & II 2) II & III 3) III & IV 4) II & IV

5. Difference between water potential of soil water solution and root xylem is

1) 10 times 2) 100 times 3) 1000 times 4) 50 times

6. According to cohesion - tension theory efficient structures in conducting water.

1) Vessels 2) Tracheids

3) Membranes 4) Intercellular spaces.

7. A leafless twig placed in a beaker of water

1) Cannot transpire 2) Transpires very fast

3) Can only absorb 4) Transpires very slowly

8. Pressure potential is said to be negative during

1) Night 2) High transpiration

3) Low transpiration 4) Water movement in vessel with large diameter

9. Maximum transpiration is by

1) Stomata 2) Cuticle 3) Lenticels 4) Cuticle & Lenticels

10. Scotoactive stomata

1) Opens during day time 2) Opens during night time

3) Opens during Day & Night 4) Never opens

11. Dumbbell shaped guard cells are seen in

1) All monocots 2) Liliaceae 3) Graminaceae 4) Dicotyledons

12. Source of protons during stomatal opening is

1) Water 2) Sugars 3) Light 4) Malate

13. During opening of stomata

I: Entry of K+ is active II : Entry of Cl is active

III: Export of H+ is active IV: Entry of H_2O is active

Correct statements are

1) I & II 2) II & III 3) I & III 4) I & IV

14. Transpiration can be demonstrated by

1) Ganong's potometer 2) Bell jar experiment

3) *Hydrilla* experiment 4) Barometer

15. The factors that show inversely proportional relationship with transpiration

1) Temperature & Humidity 2) Availability of water & Very high velocity of wind

3) Light & Temperature 4) Humidity & Very high velocity of wind

16. Assertion: Embolism stops transpiration

Reason(R) : Embolism stops the movement of water in xylem vessels

1) Both A and R are true and R is the correct explanation of A.

2) Both A and R are true but R is not the correct explanation of A.

3) A is true, R is false 4) A is false, R is true

17. Natural anti transpirant in plants is

1) Auxin 2) Malate 3) Proton 4) ABA

18. Transpiration plays an indirect role in

1) Uptake & Transport of minerals 2) Absorption of water

3) Translocation of solutes 4) Distribution of water

19. Transpiration is a 'necessary evil '- stated by

1) Slatyer 2) Arnon 3) Knop 4) Curtis

20. Phenyl mercuric acetate (PMA) is

1) An antibiotic used as an antitranspirant

2) A fungicide used to increase transpiration

3) A fungicide used as an antitranspirant

4) A growth harmone used as an anti transpirant.

21. True statement among the following

1) Water potential is inversely proportional to pressure potential.

2) Water potential is inversely proportional to osmotic potential.

3) Water potential is directly proportional to osmotic potential.

4) Osmotic potential and solute potential are not equal.

22. The pathway of water into the plant

1) Root hairs-→ xylem → Cortex → endodermis -→ pericycle

2) Root hairs→ Cortex → pericycle → endodermis → xylem

3) Root hairs → pericycle →Cortex → endodermis→ xylem

4) Root hairs → Cortex → endodermis → pericycle→ xylem

23. In a highly turgid cell

1) $\psi=\pi$ 2) P = 0 3) ψ is near to zero 4) $\pi=0$

24. Preservation of pickles from live bacteria by addition of salt involves

1) Diffusion of salt into bacteria

2) Hydration of bacteria

3) Plasmolysing the bacteria.

4) Starving the bacteria

25. Water potential is equal to osmotic potential during

1) High transpiration 2) Plasmolysis 3) Turgidity 4) Equilibrium

26. Water potential is influenced by

1) Temperature 2) Pressure 3) Solute 4) All the above

27. If osmotic potential is -0.5Mpa and pressure potential is +0.5Mpa water potential is

1) Zero 2) 0.1 Mpa 3) 1 Mpa 4) -1Mpa

28. Cohesion –Tension theory proposed by

1) Taylor 2) Dixon 3) Hales 4) Web

29. Water potential is maximum in

1) -0.01 Mpa 2) -0.02 Mpa 3) -0.1 Mpa 4) –0.03 Mpa

30. Stomatal Index is

1) Ratio between stomata and leaf surface area

2) Ratio between stomata per unit area and sum of epidermal cells and stomata of that unit area.

3) Ratio between epidermal cells and stomata of that unit area

4) Ratio between sum of stomata and epidermal cells of a unit area and stomata of that area.

31. Transpiration is described as an " unavoidable evil" by

1) Curtis 2) Levitt 3) Bowling 4) Barnes

32. Water that is available to the plant is

1) Gravitational water 2) Capillary water

3) Hygroscopic water 4) Run away water

33. The tallest angiosperm plant ever recorded is

1) Eucalyptus amygdalina 2) Sequia sempervirens

3) Pseudotsuga menziesii 4) Bauhinia purpurea

34. Assetion A : Stomata opens when guard cells bulge

Reason R : Bulging is unequal due to unequal thickening of cell walls.

1) Both A and R are true and R is the correct explanation of A.

2) Both A and R are true but R is not the correct explanation of A.

3) A is true, R is false 4) A is false, R is true

35. A seed with water potential -60 Mpa sown in soil with water potential -100 Mpa

1) Seed germinates 2) Cannot germinate

3) Seed looses water 4) Water potential of seed decreases

36. In tall trees of 400 feet water potential difference observed is

1) 1.3 Mpa 2) 4.0 Mpa 3) 13 Mpa 4) 0.4 Mpa

37. Assertion A : Bean seeds can absorb water more quickly than paddy.

Reason R : Proteinacious seeds have very low potential.

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38. Process not spontaneous is

1) Diffusion of soil water crossing cell wall 2) Water crossing membrane

3) Water entering into seeds 4) Water movement against concentration gradient

39. If dry raisons soaked in water

1) Water becomes sweeter.

2) Raison absorbs water and looses sugars

3) Only endosmosis takes place

4) After complete bulging both exosmosis and endosmosis takes place.

40. Assertion (A): A dead piece of wood also absorbs water.

Reason (R) : Water absorption is a passive process

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3) A is true, R is false 4) A is false, R is true

Key

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