Transpiration

1. Maximum transpiration is by ( )

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

2. Scotoactive stomata ( )

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

3) Opens during Day & Night 4) Never opens

3. Dumbbell shaped guard cells are seen in ( )

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

4. Source of protons during stomatal opening is ( )

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

5. During opening of stomata, into the guard cells ( )

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

6. Transpiration can be demonstrated by ( )

1) Ganong's potometer 2) Bell jar experiment

3) *Hydrilla* experiment 4) Barometer

7. 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

8. Assertion (A): Spinous plants transpire less ( )

Reason(R) : Spines are adoptions of xerophytic plants

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

9. Natural anti transpirant in plants is ( )

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

10. Transpiration plays an indirect role in ( )

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

3) Translocation of solutes 4) Distribution of water

11. Transpiration is a 'necessary evil '- stated by ( )

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

12. 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 hormone used as an anti transpirant.

13. 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 are

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.

14. Ascent of sap is movement of water from ( )

1) Soil into Xylem 2) Xylem into leaves

3) Xylem into atmosphere 4) Leaves into atmosphere

15. Guttation is ( )

1. Evidence of root pressure.

2. Movement of water through the apoplast.

3. Movement of soluble organic materials through plants

4. Negative pressure created by transpiration.

16. When water potential of accessory cells increase ( )

1) Stomata open 2) Stomata closes

3) Stomata either opens or closes 4) Stomata neither opens nor closes

17. True statement regarding opening of stomata ( )

1) Wind is essential 2) Water potential gradient is essential

3) Light is essential. 4) Protons are essential.

18. True statement regarding environmental factors is ( )

I: High wind velocity increases transpiration continuously

II: As available water is pure rate of transpiration is maximum.

III: Atmospheric pressure increases transpiration.

IV: Light increases transpiration to certain extent

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

19. Apparently the source of energy for keeping stomata open is ( )

1. Ion transfer 2.Transpiration

3. Photosynthesis 4.Hydrogen bond formation

20. Transpiration rate is inversely proportional to ( )

1) Temperature 2) Light 3) Gentle breeze 4) High wind speeds

21. Stomatal opening and closing depends on ( )

1) pH changes 2) Guard cell size

3) Size of stomatal chamber 4) Solute concentration of guard cells

22. During stomatal closing ( )

1) Protons move actively into guard cells 2) Protons moves passively into guard cells.

3) Chloride moves passively into guard cells. 4) Malate moves to adjacent cells.

23. The reason that a column of water in a tall tree does not sink because of its weight is ( )

1. The tensile strength of a column of water.

2. Bubbles form that are too large to be transported

3. The presence of strong ion concentrations near the top of the tree

4. The formation of hydrogen bonds with the plants vessels

24. Stomata open during day and closes during night are called as ( )

1) Photoactive 2) Scotoactive

3) Amphiactive 4) Hypoactive

25. Rate of the transpiration from the upper surface and lower surface of the leaf can be known by ( )

1. Bell jar experiment 2) Cobalt chloride experiment

3. Ganong's potometer 4.Ganong's sunscreen

26. 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

27. SPAC is ( )

1. An expression of relationship between soil, plant and surroundings
2. An expression of relationship between stomatal pore and adjacent cells
3. Stomatal Index
4. Surface pore area

28. Lenticels are present on ( )

1. Bark of woody stems and on leaf 2. Roots and flowers
3. On woody stems and fruits 4. Young branches

29. In dumbbell shaped stomata thickenings are on ( )

1. Only inner walls 2. Only on outer walls
3. At both ends 4.Inner and outer walls in the middle

30. *Bryophyllum* transpires during ( )

1. Day 2. Night 3. Day and night 4. Never transpires

31. K^+ pump hypothesis is proposed by ( )

1. Levitt 2. Stadler 3. Slatyer 4. Bowling

32. Outward movement of H^+ are exchanged with ( )

1. Na^+ 2. K^+ 3. Cl^{--} 4. Malate ion

33. True statement from the following ( )

1. Excess K^+ enters into guard cells than H^+ efflux 2. Malate move outside guard cells
3. Chloride balances only K^+ 4. Chloride balances only malate

34. During turgid condition of the guard cells ( )

1. Outer wall becomes convex 2. Inner wall becomes convex
3. Outer wall becomes concave 4. Both the walls becomes convex

36. Membrane permeability is affected by ( )

1. CO_2 2. ABA 3. K^+ 4. $Cl^{—}$

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

1) Vessels 2) Tracheids 3) Membranes 4) Inter cellular spaces.

37. On a unit area of a leaf stomata are 20 and epidermal cells are 80.Stamatal Index is ( )

1. 0.8 2. 1.25 3. 8 4. 0.2

38. When root/ shoot ratio increases rate of transpiration ( )

1. Decreases 2. Increases
3. Either increases or decreases 4. Neither increases nor decreases

39. The upward movement of water against gravitation force in plants is ( )

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

40. 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

Transpiration-Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	**2**	**3**	**4**	**3**	**2**	**4**	**2**	**4**	**3**	**4**	**3**	**2**	**2**	**1**	**1**	**2**	**3**	**1**	**4**
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
4	**1**	**1**	**1**	**2**	**4**	**1**	**3**	**4**	**2**	**1**	**2**	**1**	**1**	**2**	**2**	**1**	**2**	**4**	**4**