YAKEEN-2022

Transport in plants –DPP-07(PYQ)

1. The process responsible for facilitating loss of water in liquid form from the tip of grass blades at night and in early morning is: (2020)
a. Root pressure
b. Imbibition
c. Plasmolysis
d. Transpiration

2. Select the **incorrect** statement. (2020 Covid Re-NEET)
a. Movement of minerals in xylem is unidirectional
b. Unloading of sucrose at sink does not involve the utilization of ATP
c. Elements most easily mobilized in plants from one region to another are : phosphorus, sulphur, nitrogen and potassium
d. Transport of molecules in phloem can be bidirectional

3. Xylem translocates (2019)
a. Water only
b. Water and mineral salts only
c. Water, mineral salts and some organic nitrogen only
d. Water, mineral salts, some organic nitrogen and hormones

4. What is the direction of movement of sugars in phloem? (2019)
a. Non-multidirectional
b. Upward
c. Downward
d. Bi-directional

5. Stomatal movement is not affected by: (2018)
a. Temperature
b. Light
c. O_2 concentration
d. CO_2 concentration

6. Which of the following facilitates opening of stomatal aperture? (2017-Delhi)
a. Contraction of outer wall of guard cells
b. Decrease in turgidity of guard cells
c. Radial orientation of cellulose microfibrils in the cell wall of guard cells
d. Longitudinal orientation of cellulose microfibrils in the cell wall of guard cells

7. The water potential of pure water is: (2017-Delhi)
a. Zero
b. Less than zero
c. More than zero but less than one
d. More than one

8. Water vapor comes out from the plant leaf through the stomatal opening. Through the same stomatal opening carbon dioxide diff uses into the plant during photosynthesis. Reason out the above statements using one of following options: (2016 - I)
a. Both processes cannot happen simultaneously
b. Both processes can happen together because the diffusion coefficient of water and CO_2 is different
c. The above processes happen only during night time
d. One process occurs during day time and the other at night

9. A few drops of sap were collected by cutting across a plant stem by a suitable method. The sap was tested chemically. Which one of the following test results indicates that it is phloem sap? (2016 - II)
a. Low refractive index
b. Absence of sugar
c. Acidic
d. Alkaline

10. Which one gives the most valid and recent explanation for stomatal movements? (2015)
a. Starch hydrolysis
b. Guard cell photosynthesis
c. Transpiration
d. Potassium influx and efflux

11. Transpiration and root pressure cause water to rise in plants by: (2015)
a. Pushing it upward
b. Pushing and pulling it, respectively
c. Pulling it upward
d. Pulling and pushing it, respectively

12. In a ring girdled plant: (2015)
a. The shoot and root die together
b. Neither root nor shoot will die
c. The shoot dies first
d. The root dies first

13. Root pressure develops due to: (2015 Re)
a. Low osmotic potential in soil
b. Passive absorption
c. Increase in transpiration
d. Active absorption

14. A column of water within xylem vessels of tall trees does not break under its weight because of: (2015 Re)
a. Tensile strength of water
b. Lignifications of xylem vessels
c. Positive root pressure
d. Dissolved sugars in water

15. Which of the following criteria does not pertain to facilitated transport? (2013)
a. Uphill transport
b. Requirement of special membrane proteins
c. High selectivity
d. Transport saturation

16. Guttation is the result of: (2011 Mains)
a. Osmosis b. Root pressure
c. Diffusion d. Transpiration

17. Function of companion cells is: (2011 Mains)
a. Loading of sucrose into sieve elements by passive transport
b. Loading of sucrose into sieve elements
c. Providing energy to sieve elements for active transport
d. Providing water to phloem

18. Which one of the following is wrongly matched? (2011 Pre)
a. *Cassia* – Imbricate aestivation
b. Root pressure – Guttation
c. *Puccinia* – Smut
d. Root – Exarch protoxylem

19. The water potential of pure water is
a. less than zero
b. more than zero but less than one
c. more than one
d. zero. *(NEET 2017)*

20. Which of the following is most valid theory for opening of stomata?
a K+ -malate theory
b. Root pressure theory
c. Starch hydrolysis theory
d. Guard cell photosynthesis theory *(jipmer 2017)*

21. Apoplast movement of water in root is stopped by

a. Suberin
b. lignin
c. Cutin
d. Sporopollenin *(AIIMS-2016)*

22. Porins are present in
a. some bacteria
b. Plastids
c. both a and b
d. vacuole. *(*AIPMT-2004*)*

23. Which of the following use to measure transpiration
a. Cobalt chloride test
b. osmometer
c. anemometer
d. photometer. *(comed k 2011)*

24. Sink for transport of mineral from xylem is
a. root
b. mature leaf
c. senescent leaf
d. meristem . *(comed k 2009)*

25. Transpiration ratio is highest in
a. CAM
b. mesophytes
c. C-3 plant
d. C-4 plants .
(2015 Cancelled)

26. Which one gives the most valid and recent explanation for stomatal movement?
a. Starch hydrolysis
b. Guard cell photosynthesis
c. Transpiration
d. Potassium influx and efflux
(2015 Cancelled)

27. Which of the following is reason for wooden door to swell in rainy season
a. imbibition
b. Water potential
c. Plasmolysis
d. Osmotic pressure *(jipmer 2013)*

28. In land plants, the guard cells differ from other epidermal cells in having
a. cytoskeleton
b. mitochondria
c. endoplasmic reticulum
d. chloroplasts. *(2011)*

29. Reverse osmosis is the result of
a. low pressure potential lower than osmotic pressure
b. Pressure more than osmotic pressure
c. solute potential low
d. root pressure.
(Mains 2007)

30. Guard cells help in
a. transpiration
b. guttation
c. fighting against infection
d. protection against grazing. *(2009)*

31. 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. *(2008)*

32. 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. no movement of water
b equilibrium between the two
c. movement of water from cell A to B
d. movement of water from cell B to A.
(2007)

33. The translocation of organic solutes in sieve tube members is supported by
a. cytoplasmic streaming
b. root pressure and transpiration pull
c. P proteins
d. mass flow involving a carrier and ATP.
(2006)

34. Potometer works on the principle of
a. osmotic pressure
b amount of water absorbed equals the amount transpired
c. root pressure
d. potential difference between the tip of the tube and that of the plant. *(2005)*

35. Stomata of a plant open due to
a. influx of potassium ions
b. efflux of potassium ions
c. influx of hydrogen ions
d. influx of calcium ions. *(2003)*

36. Main function of lenticel is
a. transpiration b. guttation
c. gaseous exchange
d. bleeding. *(2002)*

37. Opening and closing of stomata is due to the
a. hormonal change in guard cells
b. change in turgor pressure of guard cells
c. gaseous exchange
d. respiration. *(2002)*

38. Passive absorption of minerals depends on
a. temperature
b. temperature and metabolic inhibitor
c. metabolic inhibitor
d. humidity. *(2001)*

39. Glycolate induces opening of stomata in
a. presence of oxygen
b. low CO_2 concentration
c. high CO_2
d. CO_2 absent. *(2001)*

40. Loading of phloem is related to
a. increase of sugar in phloem
b. elongation of phloem cell
c. separation of phloem parenchyma
d. strengthening of phloem fiber. *(2001)*

41. The movement of ions against the concentration gradient will be
a. active transport b. osmosis
c. diffusion
d. all of the above. *(2000)*

42. In soil, water available for plants is
a. gravitational water
b. chemically bound water
c. capillary water
d. hygroscopic water. *(1999)*

43. The water potential and osmotic potential of pure water are
a. 100 and 200
b. zero and 100
c. 100 and zero
d. zero and zero.
(1998)

44. When a cell is fully turgid, which of the following will be zero?
a. Turgor pressure
b. Water potential
c. Wall pressure
d. Osmotic pressure
(1997)

45. With an increase in the turgidity of a cell, the wall pressure will be
a. fluctuate
b. remain unchanged
c. increase
d. decrease. *(1997)*

ANSWERS

1. a
2. b
3. d
4. d
5. c
6. c
7. a
8. b
9. d
10. d
11. d

12. d
13. d
14. a
15. a
16. b
17. b
18. c
19. d
20. a
21. a
22. b
23. a
24. d
25. d
26. d
27. a
28. d
29. b
30. a
31. d
32. c
33. c
34. b
35. a
36. c
37. b
38. a
39. b
40. a
41. a
42. c
43. d
44. b
45. c

Note - If you have any query/issue

Mail us at support@physicswallah.org