BIOLOGY

BOOKS - NEET PREVIOUS YEAR (YEARWISE + CHAPTERWISE)

TRANSPORT IN PLANTS

Exercise

1. Which of the following facilitates opening of stomatal aperture ?

A. Contraction of outer wall of guard cells

B. Decreases in tugidity of guard cells

C. Radial crientation of cellulose microfibrils in the cell wall of guard cells

D. Longitudinal orientation of cellulose microfibrils in the cell wall of guard cell

Answer: C

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2. The water potential of pure water is

A. zero

B. less than zero

C. more than zero, but less than one

D. more than one

Answer: A

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3. 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 the following options.

A. Both processes can happen together because the diffusion coefficient of water and CO_2 is diffeent

B. The above processes happen only during night time

C. One process occurs during day time and the other at night

D. Both processes cannot happen simultaneously

Answer: A

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4. 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 ?

A. Acidic

B. Alkaline

C. Low refrective index

D. The absence of sugar

Answer: B

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5. Root pressure develops due to

A. active absorption

B. low osmotic optential in soil

C. passive absorption

D. increase in transpiration

Answer: A

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

A. dissolved sugars in water

B. tensile strength of water

C. lignification of xylem vessels

D. positive root pressure

Answer: B

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7. Which of the following criteria does not pertain to facillatated transport

A. Requirement of special membrane proteins

B. High selectivity

C. Transport saturation

D. Uphil transport

Answer: D

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8. In land plants the guard cells differ from other epidermal cells in having

A. mitochondria

B. endoplasmic reticulum

C. chloroplasts

D. cytoskeleton

Answer: C

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9. Guard cells help in

A. protection against grazing

B. transpiration

C. guttation

D. fighting against infection

Answer: B

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

A. lignified thick walls

B. cohesion and adhesion

C. weak gravitational pull

D. transpiration pull

Answer: B

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11. 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-A

B. no movement of water

C. equilibrium between the two

D. movement fo water from cell A-B

Answer: D

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12. The translocation of organic solutes in sleve tube membres is supportted by

A. P-proteins

B. mass flow incolving a carrier and ATP

C. cytoplasmic streaming

D. root pressure and transpiration pull

Answer: B

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13. Stomata of a plant open due to

A. influx of hydrogen ions

B. influx of calcium ions

C. influx of potassium ions

D. efflux of potassium ions

Answer: C

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14. Stomata of CAM plants

A. open during the night and close during the day

B. never open

C. are always open

D. open during the day and close at night

Answer: A

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15. Opening and closing of stomata is due to

A. hormonal change in guard cells

B. change in turgo pressure of guard cells

C. gaseous exchange

D. respiration

Answer: B

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16. 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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17. Which of the following have sunken stomata

A. Nerium

B. Hydrilla

C. Mango

D. Guava

Answer: A

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18. Water enters a cell due to

A. OP

B. SP

C. TP

D. WP

Answer: B

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

In soil, water available for plants is

A. capillary water

B. hygroscopic water

C. gravitional water

D. chemically bound water

Answer: A

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20. Water potential and osmotic potential of pure water are

A. 100 and zero

B. zero and zero

C. 100 and 200

D. zero and 100

Answer: B

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21. If turgidity of a cell surrounded by water increases, the wall pressure will

A. increase

B. clecrease

C. fluctuate

D. remain unchanged

Answer: A

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22. Osmotic pressure in the leaf cells is

A. excessive transpiration

B. low transpiration

C. excessive absorption

D. guttation

Answer: A

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23. Water entering root due to diffusion is part of

A. endosmosis

B. osmosis

C. passive absorption

D. active absorption

Answer: C

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24. 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 organic compounds in the cells

C. chemical potential gradient

D. water potential gradient

Answer: D

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25. 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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26. Some of the growth regulators affect stomatal opening. Closure of stomata is brought about by

A. indole butyric acid

B. abscisic acid

C. kinetic

D. gibbercellic acid

Answer: B

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27. Which of the following is an effective adaptation for better gas exchange in plants ?

A. Precence of multiple epidermis

B. Presence of hair on the lower epidermis

C. Presence of waxy cuticle covering the epidermis of the leaves

D. The location of the stomata primarily on the lower surface of the leaf, the side

turned away from the direct sun rays

Answer: D

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28. The direction and rate of water movement from cell to cell is based on

A. WP

B. TP

C. DPD

D. incipient plasmolysis

Answer: C

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

A. opens fully

B. soens partially

C. closes completely

D. remains unchanged

Answer: C

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

A. its phloem is situated interior to xylem

B. its stem surface is covered with waxy coating

C. its vasuclar bundles are not present in a ring

D. its stem is thin

Answer: C

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32. Guttation is caused by

A. transpiration

B. osmosis/DPD

C. root pressure

D. osmotic pressure

Answer: C

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33. Water potential can be optained by

A. OP + TP

B. OP = WP

C. $\Psi_S + \Psi_P$

D. OP - DPD

Answer: C

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34. An innovative professor who wanted to gibe a live demonstratin of physiological process, filled a glass bottle with previously mointend mustard speed and water. He screqcapped the bottle and kept in away in a corner and resumed his lecture. Towards the

end of his lecture there was a sudden explosion with glass pieces of bottle thtown around. Which of the following phenomena did the professor want to demonstrate ?

A. Diffusion

B. Osmosis

C. Anaerobic respiration

D. lmbibition

Answer: D

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35. Mainly conductio of water in an angiosperm occurs through

A. tracheids

B. xylem vessels

C. sieve tubes

D. All of these

Answer: B

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36. Root system in a plant is well developed

A. due to deficienct to auxins

B. due to deficiency of cytokinins

C. due to deficiency of minerals

D. for increased absorption of water

Answer: D

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

A. Translocation

B. Transpiration

C. Transformation

D. Thermodenaturation

Answer: B

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38. 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. decreases in cell sap concentration

D. plasmolysis of fuard cells

Answer: B

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39. Stomata in angiosperms open and close due to

A. their genetic constitution

B. effect of hormones

C. change of turgor pressure in guard cells

D. pressure of gasses inside the leaves

Answer: C

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40. The spraying of phenyl mercuric acetate in leaves

A. increases transpiration

B. reduces transpiration

C. increases rate of photosynthesis

D. causes guttation

Answer: B

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