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PARISHRAMA NEET ACADEMY

TARGET NEET - 2022

BIOLOGY

TOPIC: TRANSPORT IN PLANTS

21. (2)

22. (3)
Active K^+ transport mechanism was given by Fujino. According to this theory when leaf is exposed to light, malic acid appears in guard cells by hydrolysis of starch. This malic acid get dissociated into malate and H^+ ions leave the guard cell and K^+ ions accumulate in guard cell. K^+ ions react with malate to form potassium malate which is osmotically active, as a result water from the adjoining cell enters the guard cells, increases its turgor pressure and the stomata opens. The extent of K^+ in the guard cells determines the size of stomatal opening.

23. (1)
Application of minute quantity of abscisic acid to leaves shall reduce transpiration to a great extent through partial closure of stomata. It conserves water and reduces the requirement of irrigation. Photosynthesis is reduced to a lesser extent. Cytokinins cause stomata to open while abscisic acid results in their closure. ABA release stop the K exchange and K ions are transported back into subsidiary cells.

24. (1)
Food is transported by vascular tissue phloem from source to sink. Source is a part that synthesises food and sink is a part that stores or needs the food. Since source and sink can be reversed depending on plant's need, therefore direction of movement of sugar in phloem can be bidirectional, i.e., both upwards or downwards.

25. (2)

26. (2)

27. (4)
Infacilitated diffusion special proteins help to move substances across membranes along the concentration gradient without expenditure of ATP energy. Facilitated diffusion is very specific, it allows cell to select substances for uptake. It is sensitive to inhibitors which react with protein side chains.

28. (2)
0.6 M NaCl solution is hypertonic to 0.6 M sucrose solution because there are more solutes per unit volume in NaCl solution as compared to sucrose esolution. Hence, when the cell is placed in 0.6M NaCl solution after being placed in 0.6M

sucrose solution water will move out it and its size will decrease on account of exosmosis.

29. (2)

30. (3)

Osmotic pressure is defined as the pressure required to completely stop the entry of water into an osmotically active solution across a semipermeable membrane. It is numerically equal to osmotic potential (or solute potential) but opposite in sign. The osmotic pressure of pure solvent at 25 °C and 1 atm is zero.