

8.2. WATER UPTAKE

01. 0610_w16_qp_22 Q: 16

A plant shoot is placed in a solution of a dye.

The dye moves up the stem.

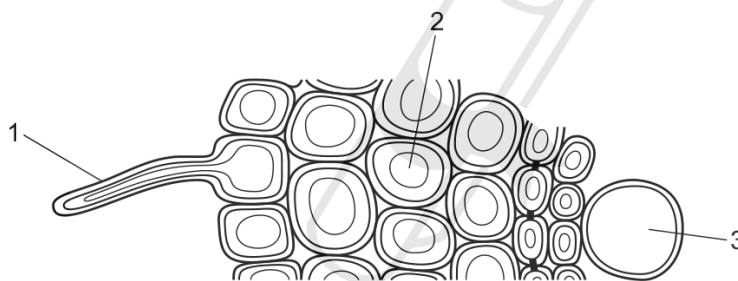
Under which conditions will the dye move slowest?

	temperature	humidity
A	high	high
B	high	low
C	low	high
D	low	low

8.2 Wateruptake

02. 0610_s21_qp_21 Q: 17

The diagram shows part of a cross-section of a root.



What are cells 1, 2 and 3?

	1	2	3
A	root cortex cell	root hair cell	mesophyll cell
B	root hair cell	root cortex cell	xylem
C	root hair cell	root cortex cell	mesophyll cell
D	root cortex cell	root hair cell	xylem

03. 0610_s21_qp_22 Q: 17

Which sequence describes the pathway taken by water as it moves through a plant?

- A** root hair cell → xylem → root cortex cell → mesophyll
- B** mesophyll → xylem → root cortex cell → root hair cell
- C** root cortex cell → root hair cell → xylem → mesophyll
- D** root hair cell → root cortex cell → xylem → mesophyll

04. 0610_w21_qp_23 Q: 16

How is the structure of root hair cells related to their function?

- A** They have chloroplasts for photosynthesis.
 - B** Their cell wall is partially permeable to absorb water by osmosis.
 - C** They have a large surface area to increase the rate of mineral ion uptake.
 - D** Both the cell wall and cell membrane control the active uptake of mineral ions.
-

05. 0610_s20_qp_22 Q: 15

Which change increases the rate of water uptake by the roots of a plant?

- A** decrease in evaporation of water from mesophyll cells
 - B** decrease in length of root hairs
 - C** decrease in water potential of root hair cells
 - D** decrease in water potential of soil water
-

06. 0610_w20_qp_21 Q: 15

In which order does water pass through these structures in a plant?

- A** mesophyll → root hair → xylem
 - B** mesophyll → xylem → root hair
 - C** root hair → mesophyll → xylem
 - D** root hair → xylem → mesophyll
-

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8.2. WATER UPTAKE

07. 0610_s19_qp_21 Q: 17

The table shows the rate of water flow through a tree over a 12 hour period.

time of day	rate of flow / cm per hour
7:00	100
9:00	120
11:00	140
13:00	250
15:00	300
17:00	260
19:00	180

What conclusion can be drawn from the table?

- A Between 7:00 and 17:00 hours the rate of flow continuously increases.
- B The greatest increase in rate of flow in a two-hour period is between 11:00 and 13:00 hours.
- C Water does not flow up through a tree at night.
- D Water flow is affected by humidity.

08. 0610_s18_qp_23 Q: 15

The diagram shows the pathway of water from the soil through a plant.

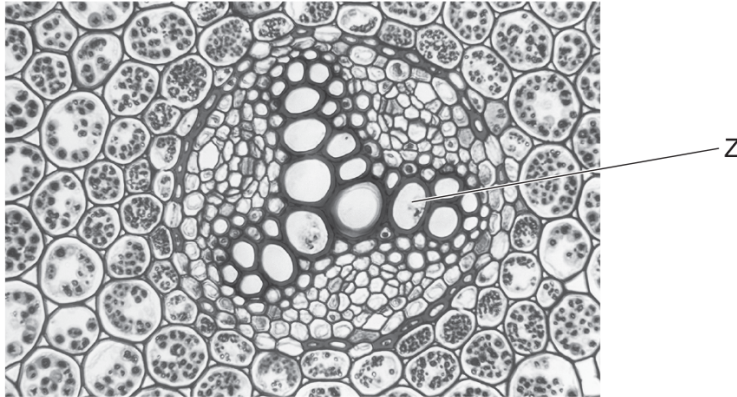
soil → X → Y → Z → mesophyll cells

Which cells are represented by X, Y and Z?

	X	Y	Z
A	root hair cells	root cortex cells	xylem
B	root hair cells	xylem	root cortex cells
C	xylem	root cortex cells	root hair cells
D	xylem	root hair cells	root cortex cells

09. 0610_w18_qp_21 Q: 15

The photomicrograph shows a cross-section through a buttercup root.

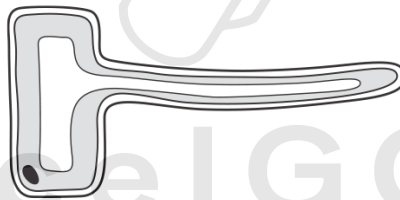


What is the function of the tissue labelled Z?

- A site of photosynthesis
- B site of respiration
- C transport of sugars
- D transport of water

10. 0610_w18_qp_22 Q: 15

The diagram shows a plant cell.



What type of plant cell is this?

- A guard cell
- B mesophyll cell
- C root cortex cell
- D root hair cell

8.2. WATER UPTAKE

11. 0610_m16_qp_22 Q: 17

By which process is water lost from a leaf?

- A active transport
- B diffusion
- C osmosis
- D photosynthesis

12. 0610_p16_qp_20 Q: 10

Which row shows the most likely number of chloroplasts in three types of cell in a leaf?

	epidermis	mesophyll	vascular bundle cell
A	0	6	17
B	0	17	0
C	17	6	0
D	17	0	6

13. 0610_s16_qp_21 Q: 17

The diagram shows a potted plant and the same plant 24 hours later.

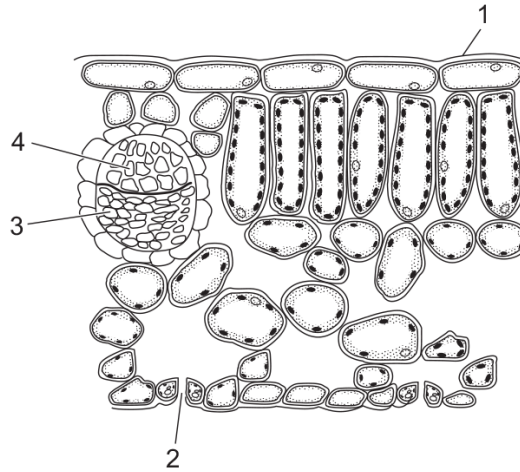


What causes the change in the appearance of the plant?

- A Water loss is greater than water uptake.
- B Water moves from the leaves to the stem.
- C Water uptake is equal to water loss.
- D Water uptake is greater than water loss.

14. 0610_w16_qp_21 Q: 10

The diagram shows part of a leaf in cross-section.



What shows the correct function of a numbered part?

	part	functions
A	1	photosynthesis
B	2	gaseous exchange
C	3	transport of water from the root
D	4	transport of sugars to the root

SN	Paper	Q. No.	Answer
01	0610_w16_qp_22	16	C
02	0610_s21_qp_21	17	B
03	0610_s21_qp_22	17	D
04	0610_w21_qp_23	16	C
05	0610_s20_qp_22	15	C
06	0610_w20_qp_21	15	D
07	0610_s19_qp_21	17	B
08	0610_s18_qp_23	15	A
09	0610_w18_qp_21	15	D
10	0610_w18_qp_22	15	D
11	0610_m16_qp_22	17	B
12	0610_p16_qp_20	10	B
13	0610_s16_qp_21	17	A
14	0610_w16_qp_21	10	B



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