

Structure, Transport and Nutrition in Flowering Plants

1. State one difference between the seeds of monocotyledons and dicotyledons other than the number of seed leaves.
2. State **three** functions of a root.
3. What is a cotyledon?
4. Where would you find a meristem in a root?
5. What is meant by a vascular tissue?
6. State a function of sieve tubes.
7. Where in a leaf would you expect to find cells with most chlorophyll?
8. State a function of companion cells.
9. How is xylem adapted for its role in water transport?
10. Name **two** vascular tissues and give **one** way in which they differ.
11. True or false. Parallel leaf veins are characteristic of monocotyledonous plants.
12. The walls of xylem vessels are reinforced with ...
13. State a function of dermal tissue.
14. State one way in which a transverse section through a monocotyledonous stem differs from a dicotyledonous stem.
15. An organism which makes its own food is called a(n) ...
16. What is the point of entry of carbon dioxide to a leaf?
17. What is a meristem?
18. Give **two** functions of a stem.
19. Give **one** main function of the leaf.
20. Name the tube-like tissue found in the stem in which water moves through the plant.
21. Give **one** main function of the root.
22. What is meant by ground tissue?
23. Give a function of ground tissue.
24. What is a meristem?
25. What is the function of the stomata?
26. What term is used to describe the nutrition of plants?
27. Give a function of the guard cell.
28. Name **two** gases that enter or leave the leaf.
29. Name the tissue that transports water from the root to the leaves.

30. Name a plant in which the leaves are modified for food storage
31. Name a type of modified stem that functions in food storage.
32. Name a carbohydrate that you would expect to find in the modified leaves of a bulb.
33. Strong forces of attraction exist between water molecules. Give an account of the importance of these forces in raising water to great height in trees.
34. Tiny holes called ... allow gases to enter and leave the leaf.
35. Gas exchange between a leaf and the atmosphere takes place through the ...
36. Name a factor that influences the diameter of the stomata.
37. Name the apertures in stems that are equivalent to the stomata.
38. Plants obtain carbon dioxide from the air. Name **two** processes that release this gas into the air.
39. True or false. Lenticels serve the same function as stomata.
40. Name the process by which the gases move in or out of the leaf.
41. Name the openings in the leaf which allow the entry of carbon dioxide for photosynthesis.
State a factor which influences the diameter of these openings.
42. Why is a dicotyledonous (dicot) plant so called?
43. Name a dicotyledonous plant.
44. Name the two vascular tissues found in a vascular bundle.
45. Draw a labelled diagram to show a longitudinal section of phloem. Include the following labels in your diagram: sieve tube; sieve plate; companion cell
46. Give **one** function of **each** of the following: 1. Dermal tissue, 2. Ground tissue
47. In which of the vascular tissues does water transport occur?
48. State **one** way in which this tissue is adapted for water transport.
49. In which direction does water transport take place?
50. Through which microscopic **structures** does water enter a plant from the soil?
51. Name the **tissue** that water travels through in a plant.
52. Name **one** process that causes water to move upwards in a plant.
53. Consider that night has fallen and the plant is in darkness. Suggest what will happen to the **amount** of water moving through the plant **and** give a reason for your answer.
54. State **two** ways by which plants have adapted to protect themselves.
55. In the spongy mesophyll, gases can diffuse throughout the leaf. Name **one** such gas.
56. State **one** function of the stoma.
57. Name the cells which are responsible for controlling the size of the stomata.
58. Name a tissue found in plants. Give a function of the tissue referred to.
59. State **two** functions of a root.

60. Where is the xylem found in a young dicot root?
61. Where is phloem found in a young dicot root?
62. From what part of a seed does the root develop?
63. Give **one** example of a root modified for food storage.
64. Plants can be monocotyledonous or dicotyledonous. Give any **one** difference between a monocotyledonous plant and a dicotyledonous plant.
65. Give **one** example of a monocotyledonous plant **and** one example of a dicotyledonous plant
66. Xylem transports water in plants. **T or F**
67. A potato is a modified stem. **T or F**
68. In the course of your practical work you prepared a transverse section (T.S.) of a dicot stem for microscopic examination. How did you prepare the T.S.?
69. What do you understand by the term adverse external environment?
70. Give two ways in which plants protect themselves from adverse external environments.
71. What is meant by the term excretion?
72. Mention one method of excretion in flowering plants.
73. (a) Name the tissue in plant stems through which water rises to the leaves.
(b) Give one way in which this tissue is adapted for the transport of water.
(c) Give a precise location of this tissue in the stem.
State another function of the tissue referred to in (a).
74. The cohesion-tension model of transport attempts to explain water movement in plants against a particular force. Name this force.
75. Describe the principal features of the cohesion-tension model.
76. Name the two scientists mainly associated with the cohesion-tension model of transport.