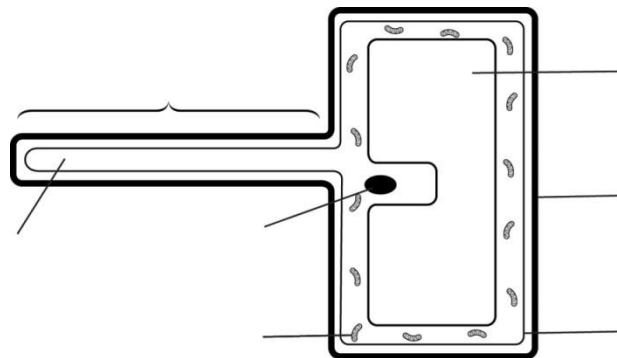


Name _____ Class _____ Date _____

1 a The diagram shows a plant **root hair cell**. Add labels to the diagram.



b What part of the cell could be described as being **partially permeable**?

c By what process does water enter the cell? Tick (✓) one.

- active transport diffusion osmosis capillary action

d Explain how the shape of the cell helps this process.

e Give two uses of water in a plant.

2 Which cells are responsible for carrying water out of the root and up the plant? Tick (✓) one.

- xylem epidermis spongy phloem

3 a Give the name of the nitrogen-containing **mineral ion** that is important for producing **proteins**.

b Explain why this mineral ion needs to be moved into a root hair cell by active transport. Use the term **concentration gradient** in your answer.

4 Some students set up an experiment to estimate the concentration of solutes in the cell sap of a potato. They used five 15 g potato cores and left each one in a different concentration of sucrose for two hours.

Final mass of potato core (g)	17.6	16.1	15.6	15.0	14.2
Concentration of sucrose (g/100 cm³)	19	17	15	13	11

a Look at the table of results. Suggest the concentration of cell sap in these potatoes.

b Explain your reasoning.

