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e 4/4 marks awarded For (a)(i) the right answer is reached, but even if the arithmetic had been wrong, a mark would have been awarded for the correct method. For (a)(ii) these are both correct features of eukaryotic cells, visible in the diagram.

(b) The amoeba has a lower water potential than the freshwater pond ✓ so it takes in water by osmosis ✓. The excess water must be removed from the cell to stop it bursting ✓.

e 3/3 marks awarded 1 mark is for stating that the cell has a lower water potential than the pond water, 1 mark for water entering by osmosis, and 1 mark for the reason why water needs to be expelled.

Student B

(a) (i) scale bar = 3 cm; $3000/150 = 20$ **XX**

(ii) It does not have a cell wall **X** and it has a nucleus ✓.

e 1/4 marks awarded For (a)(i) student B has measured in cm, not mm, and then multiplied by 1000. But there are $1000\ \mu\text{m}$ in 1 mm, so this is the wrong conversion. The answer is wrong and so is the working. In (a)(ii) 1 mark is given for mentioning the nucleus. However, some eukaryotic cells (e.g. plant cells) have cell walls, so this is not a feature to distinguish prokaryotic cells from eukaryotic cells.

(b) This stops the cell bursting ✓ as it takes in water by osmosis ✓.

e 2/3 marks awarded 1 mark is awarded for saying water enters by osmosis and 1 mark for saying that it stops the cell bursting. However, there is no mention of the water potential gradient, so the third mark cannot be given.

Question 2

(a) Describe a test you could carry out to test for a non-reducing sugar in a solution. (4 marks)

(b) Figure 2 shows the structure of sucralose. It is an artificial sweetener that cannot be digested in the body. It is used in low-calorie foods.

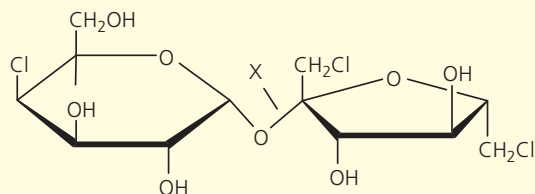


Figure 2

(i) Name the bond labelled X. (1 mark)

(ii) Sucralose contains the same monosaccharides as sucrose. Name these monosaccharides. (1 mark)

(iii) Explain why sucralose cannot be digested in the body. (2 marks)