

0 1

Some scientists investigated the rates of absorption of different sugars by the small intestine.

In one experiment they used a piece of small intestine

In a second experiment they used a piece of small intestine that was poisoned by a chemical that prevents respiration

The results are shown in the table

Sugar	Absorption rate (arbitrary units)	
	Healthy intestine	Poisoned intestine (respiration stopped)
A	98	32
B	105	50
C	31	31
D	28	29

0 1

1

Give two sugars from the table which can be absorbed by active transport

1 _____

2 _____

[2 marks]

0 1

2

Use evidence from the table to explain why you chose these sugars

[3 marks]

0 1

3

All of the sugars in the table can be absorbed by diffusion.

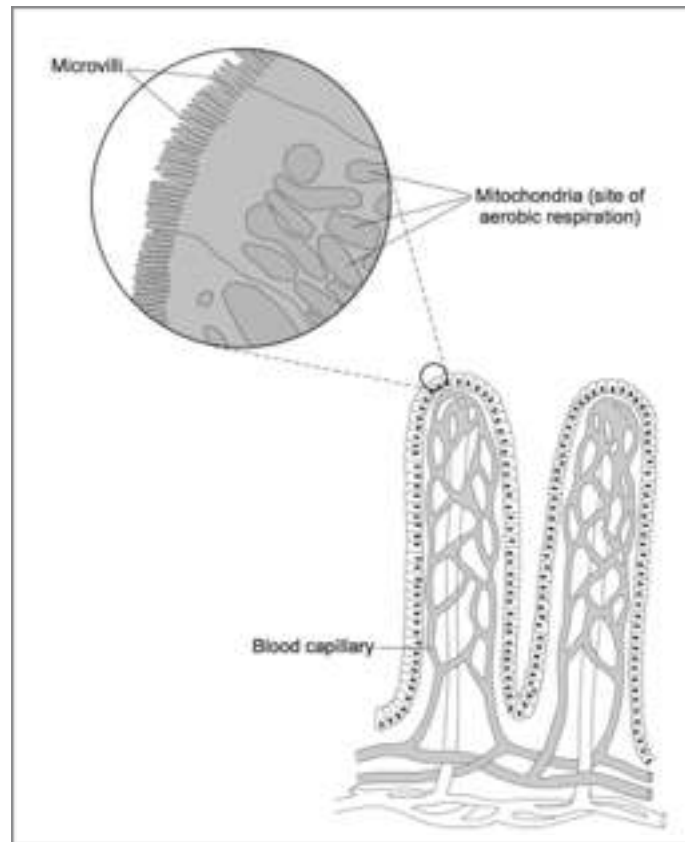
Explain how information from the table provides evidence for this

[2 marks]

0

2

The small intestine is lined with millions of villi. The diagram shows the structure of a villus.



0

2

1

In the small intestine, some of the products of digestion are absorbed into the blood by active transport.

Explain the meaning of active transport.

[2 marks]

0

2

2

How do microvilli and mitochondria help in the active transport of the products of digestion from the small intestine into the blood? [2 marks]

Microvilli _____

Mitochondria _____
