AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 4.4.2.3

Metabolism

Past-paper questions

Tier	**Higher**
Question groups	**1**
Available paper years	**2020–2020**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

4.4.2.3 Metabolism

Question 01

November 2020 | 8464/B/1H | Original Q2

0 2 Starch is digested to form sugar molecules in the digestive system.

0 2 . 1 What is the name of the enzyme that digests starch?

[1 mark]

0 2 . 2 Where are most food molecules absorbed?

[1 mark]

Tick (✓) **one** box.

- Large intestine ☐
- Liver ☐
- Small intestine ☐
- Stomach ☐

Question 2 continues on the next page

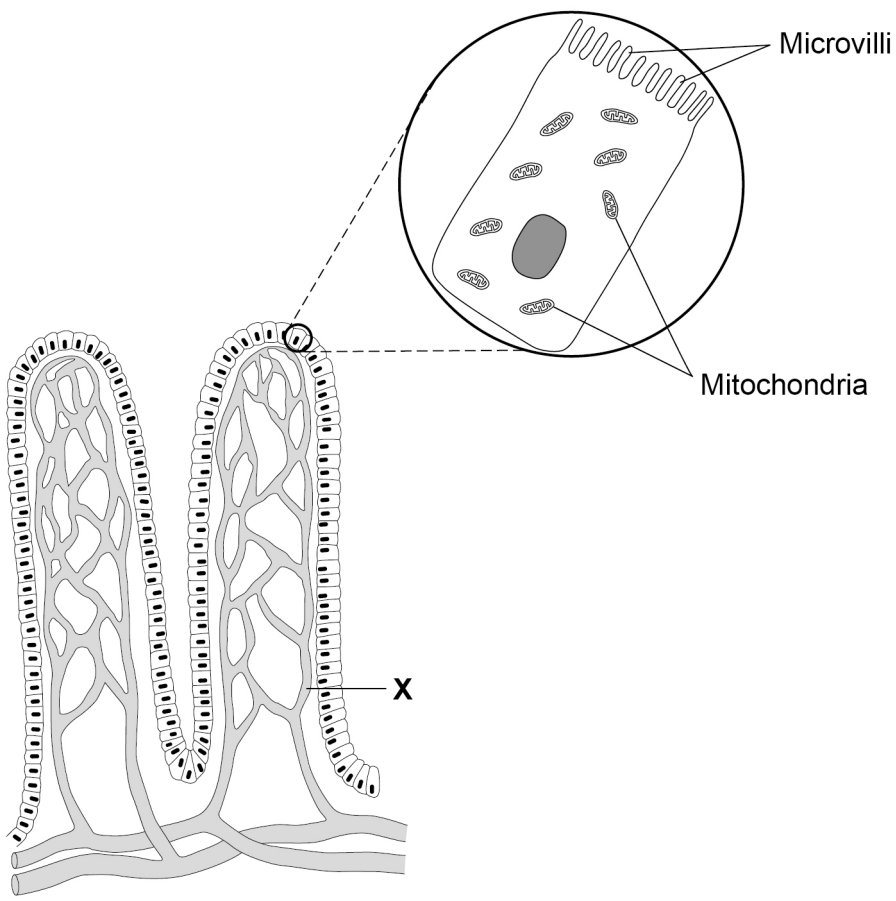
4.4.2.3 Metabolism

Question 01 · continued

Figure 2 shows two villi.

Figure 2 also shows one cell on the surface of a villus as seen using an electron microscope.

Figure 2



0 2 . 3 Give **one** advantage of using an electron microscope compared with using a light microscope.

[1 mark]

4.4.2.3 Metabolism

Question 01 · continued

0 2 . 4 What type of blood vessel is labelled **X**?

[1 mark]

Tick (✓) **one** box.

Artery ☐

Capillary ☐

Vein ☐

0 2 . 5 The real length of one villus is 0.8 mm

Calculate the image length if the villus is viewed at a magnification of ×20

Use the equation:

$$\text{magnification} = \frac{\text{size of image}}{\text{size of real object}}$$

[3 marks]

Image length = _____ mm

Question 2 continues on the next page

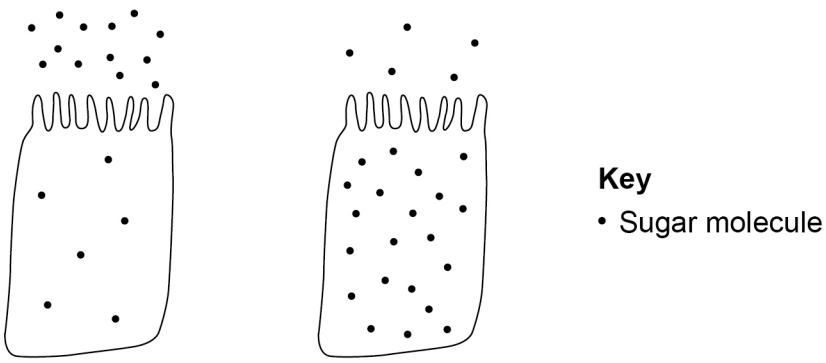
4.4.2.3 Metabolism

Question 01 · continued

Figure 3 shows two cells from the surface of a villus.

There are sugar molecules inside and next to each cell.

Figure 3



0 2 . 6 Name the process by which sugar moves into cell **A**.

[1 mark]

0 2 . 7 Name the process by which sugar moves into cell **B**.

[1 mark]

0 2 . 8 Give **one** use of sugar in the body.

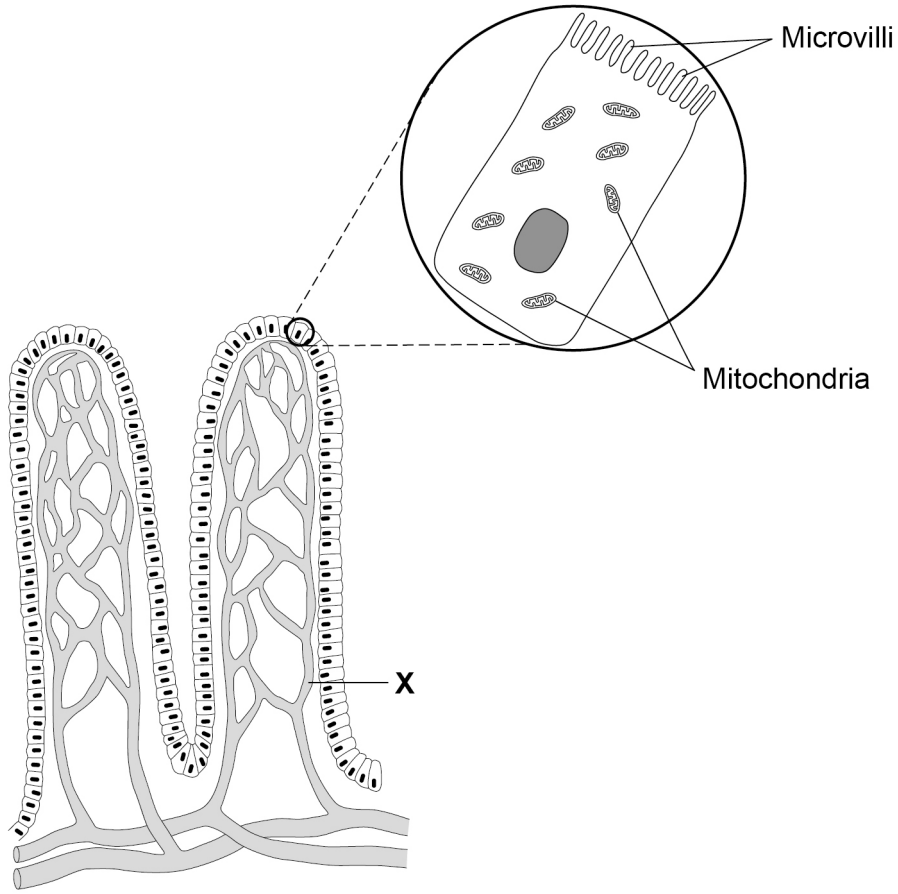
[1 mark]

4.4.2.3 Metabolism

Question 01 · continued

0 2 . 9 **Figure 2** is repeated below.

Figure 2



Explain how villi are adapted for efficient absorption of sugar molecules.

[4 marks]

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