

- 1 An athlete runs a one hundred metre race. During the short race his muscles release energy from glucose in the absence of oxygen. Lactic acid is a product of this process.



- 1 (a) What is the name of the process that releases energy from glucose in the absence of oxygen?

Anaerobic respiration [1 mark]

(1 mark)

- 1 (a) (i) The amount of energy released by this process is small in comparison to the amount of energy available in molecules of glucose.

Suggest one advantage of the process, even though it releases a small amount of energy.

It is quicker/faster or releases energy quickly [1 mark]

Glucose is only partially broken down.

(1 mark)

- 1 (a) (iii) After the race the athlete breathes heavily for a while.

Explain why.

Build up of lactic acid [1 mark]

Causes pain/is poisonous/toxic [1 mark]

Oxygen needed to oxidise lactic acid [1 mark]

To carbon dioxide and water. [1 mark]

Remember also that there is more blood flow to the muscles and this helps to remove any waste products.

(3 marks)

(Total 8 marks)