

GCSE
BIOLOGY

Biology Test 2: Infection and response and Bioenergetics
(Foundation)

Total number of marks: 32

0 7 This question is about photosynthesis.

0 7 . 1 Complete the word equation for photosynthesis.

[2 marks]

_____ + _____ → _____ + oxygen

Students investigated the effect of temperature on the rate of photosynthesis.

The students shone light from a lamp onto pondweed and measured the volume of oxygen produced per hour.

Table 3 shows the results.

Table 3

Temperature in °C	Rate of photosynthesis in cm ³ /hour			
	Test 1	Test 2	Test 3	Mean
20	18.5	19.3	19.5	X
25	32.6	34.1	32.9	33.2
30	41.9	45.2	44.9	44.0
35	38.6	39.8	44.0	40.8
40	23.1	20.5	22.4	22.0
45	1.9	14.2	2.2	2.1

0 7 . 3 Calculate mean value X .

[2 marks]

$X =$ _____ cm^3/hour

The students identified one anomalous result in **Table 3**.

0 7 . 4 Draw a ring around the anomalous result in **Table 3**.

[1 mark]

0 7 . 5 Suggest **one** possible cause of the anomalous result.

[1 mark]

0 7 . 6 How did the students deal with the anomalous result?

[1 mark]

0 7 . 7 Give **one** factor the students should have kept constant in this investigation.

[1 mark]

Table 3 is repeated below.

Table 3

Temperature in °C	Rate of photosynthesis in cm ³ /hour			
	Test 1	Test 2	Test 3	Mean
20	18.5	19.3	19.5	X
25	32.6	34.1	32.9	33.2
30	41.9	45.2	44.9	44.0
35	38.6	39.8	44.0	40.8
40	23.1	20.5	22.4	22.0
45	1.9	14.2	2.2	2.1

07.8 Why did the rate of photosynthesis decrease from 35 °C to 45 °C?

[1 mark]

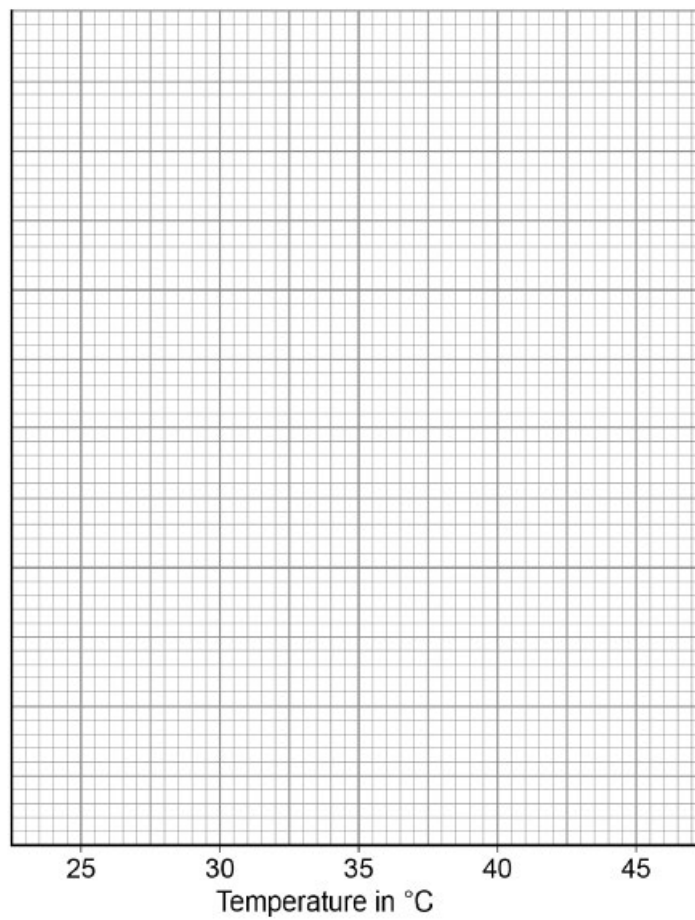
07.9 Complete **Figure 10** using data from **Table 3**.

You should:

- label the y-axis
- use a suitable scale for the y-axis
- plot the mean data from **Table 3** for temperatures from 25 °C to 45 °C
- draw a line of best fit.

[5 marks]

Figure 10



07

Glucose is broken down in respiration.

07.1

What is the chemical formula for glucose?

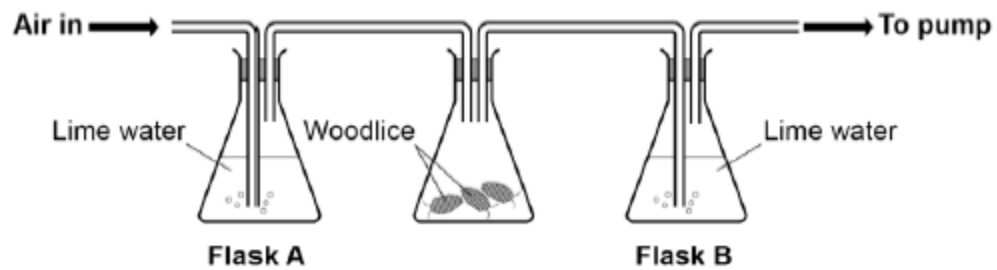
[1 mark]

Tick one box.

 $C_6H_6O_6$ $C_3H_6O_3$ $C_6H_{12}O_6$ $C_6H_{10}O_6$

Figure 12 shows the apparatus a student used to investigate aerobic respiration.

Figure 12



Limewater goes cloudy when carbon dioxide is added to it.

0 7 . 2 After 10 minutes the limewater in flask B was cloudy, but the limewater in flask A remained colourless.

Explain why.

[2 marks]

0 7 . 3 Flask A acts as a control in this investigation.

What is the purpose of a control?

[1 mark]

0 7 . 4 The student repeated the investigation with no woodlice.

Describe the appearance of the limewater in flask A and flask B after 10 minutes.

[2 marks]

Anaerobic respiration is another form of respiration in living organisms.

0 7 . 5 What is produced during anaerobic respiration in humans?

[1 mark]

Tick one box.

Carbon dioxide

Carbon dioxide and lactic acid

Lactic acid

Oxygen and water

0 7 . 6 Complete the equation for anaerobic respiration in yeast.

[1 mark]

glucose \longrightarrow carbon dioxide + _____

0 8 Mosquitoes carry a pathogen that causes malaria.

0 8 . 1 What type of pathogen causes malaria?

[1 mark]

Tick (✓) **one** box.

A bacterium

A fungus

A protist

A virus

Mosquito nets can help prevent the spread of malaria.

Table 7 shows the results of a study in one area of Africa.

Table 7

Total number of people in the study	Number of people who use mosquito nets when sleeping	Percentage of people with malaria	
		Who use mosquito nets when sleeping	Who do NOT use mosquito nets when sleeping
476	426	1.2	40

A newspaper made the following statement:

‘Study shows mosquito nets are scientifically proven to prevent malaria.’

0 8 . 2 Give **one** piece of evidence that supports the statement.

[1 mark]

0 8 . 3 Suggest **one** reason why the statement may **not** be valid.

[1 mark]

0 8 . 5 Use of mosquito nets has helped to reduce the number of deaths from malaria each year.

Suggest **one** other reason for the reduced number of deaths from malaria each year.

[1 mark]

0 8 . 6 Describe how the human body:

- prevents pathogens from entering
- defends itself against pathogens inside the body.

[6 marks]