



EXAM PAPERS PRACTICE

Boost your performance and confidence with these topic-based exam questions

Practice questions created by actual examiners and assessment experts

Detailed mark scheme

Suitable for all boards

Designed to test your ability and thoroughly prepare you

Level: IGCSE Oxford AQA Biology (9201)

Subject: Biology

Topic: IGCSE AQA Biology

Type: Topic Question

2002



1583

To be used by all students preparing for IGCSE Oxford AQA Biology (9201)
Students of other Boards may also find this useful

Biology

IGCSE AQA

Key skills

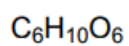
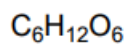
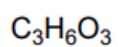
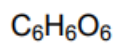


1.

Glucose is broken down in respiration.

(a) What is the chemical formula for glucose?

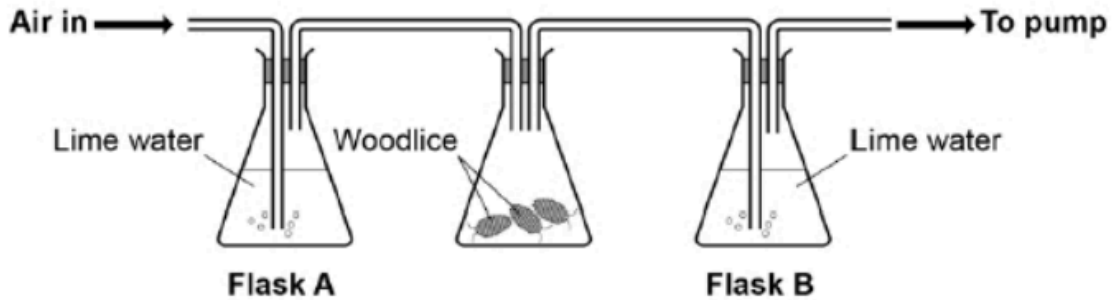
Tick **one** box.





(1)

The diagram shows the apparatus a student used to investigate aerobic respiration.



Limewater goes cloudy when carbon dioxide is added to it.

- (b) After 10 minutes the limewater in flask **B** was cloudy, but the limewater in flask **A** remained colourless.

Explain why.

EXAM PAPERS PRACTICE

Copyright © 2024 Exam Papers Practice

(2)

- (c) Flask A acts as a control in this investigation.

What is the purpose of a control?

(1)

- (d) The student repeated the investigation with no woodlice.

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



Flask A _____

Flask B _____

(2)

Anaerobic respiration is another form of respiration in living organisms.

(e) What is produced during anaerobic respiration in humans?

Tick **one** box.

Carbon dioxide

Carbon dioxide and lactic acid

Lactic acid

Oxygen and water

(1)

(f) Complete the equation for anaerobic respiration in yeast.

glucose → carbon dioxide + _____

(1)

(Total 8 marks)



2. Anaerobic respiration happens in muscle cells and yeast cells.
The equation describes anaerobic respiration in muscle cells.



- (a) How can you tell from the equation that this process is anaerobic?

(1)

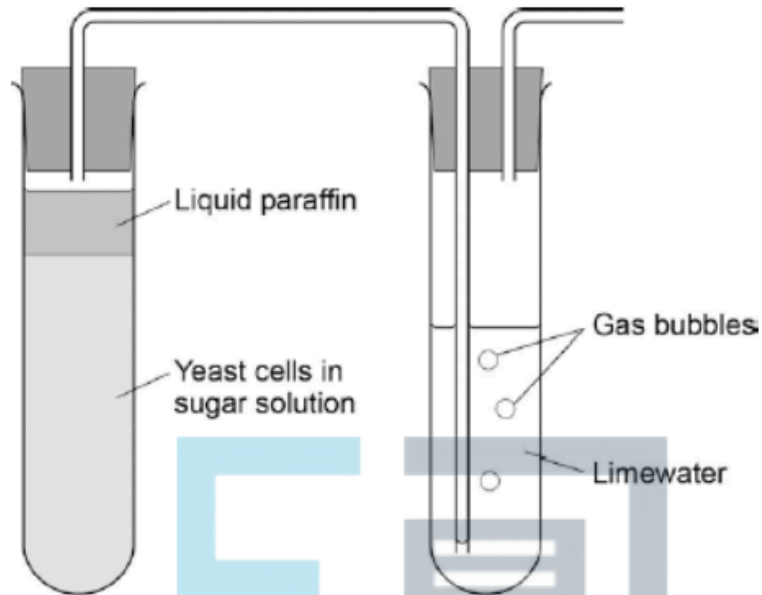
- (b) Exercise **cannot** be sustained when anaerobic respiration takes place in muscle cells.
Explain why.

(2)

EXAM PAPERS PRACTICE

Copyright
© 2024 Exam Papers Practice

- (c) The diagram below shows an experiment to investigate anaerobic respiration
in yeast cells.



What gas will bubble into Tube **B**?

Tick **one** box.

Carbon dioxide

Nitrogen

Oxygen

Water vapour

(1)

(d) Describe how you could use tube **B** to measure the rate of the reaction in tube **A**.

(2)

(e) Anaerobic respiration in yeast is also called fermentation.

Fermentation produces ethanol.

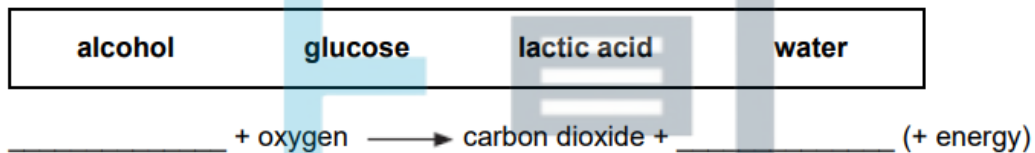
Give one use of fermentation in the food industry.

(1)

(Total 7 marks)

3.

(a) Use words from the box to complete the equation for aerobic respiration.

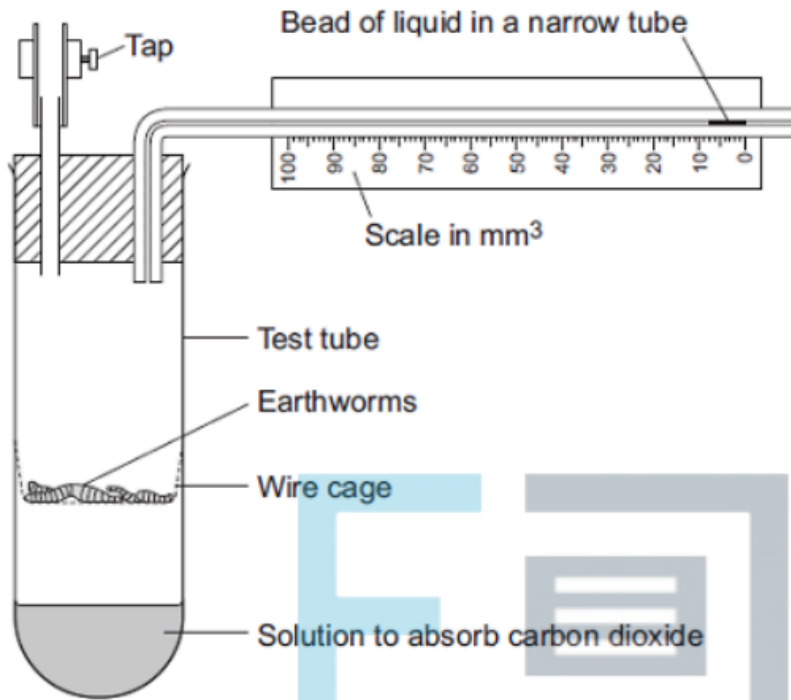


(2)

(b) Some students investigated the effect of temperature on the rate of aerobic respiration in earthworms.

The diagram shows the apparatus the students used.

When the tap is closed, the bead of liquid moves to the left as the earthworms take in oxygen.



The students put the test tube into a water bath at 20°C for 10 minutes. They left the tap open during this time.

Why did the students put the test tube in the water bath at 20°C for 10 minutes?

Tick (✓) **one** box.

Copyright © 2024 Exam Papers Practice

Because the air contains more oxygen at 20°C.

Because the air contains less carbon dioxide at 20°C.

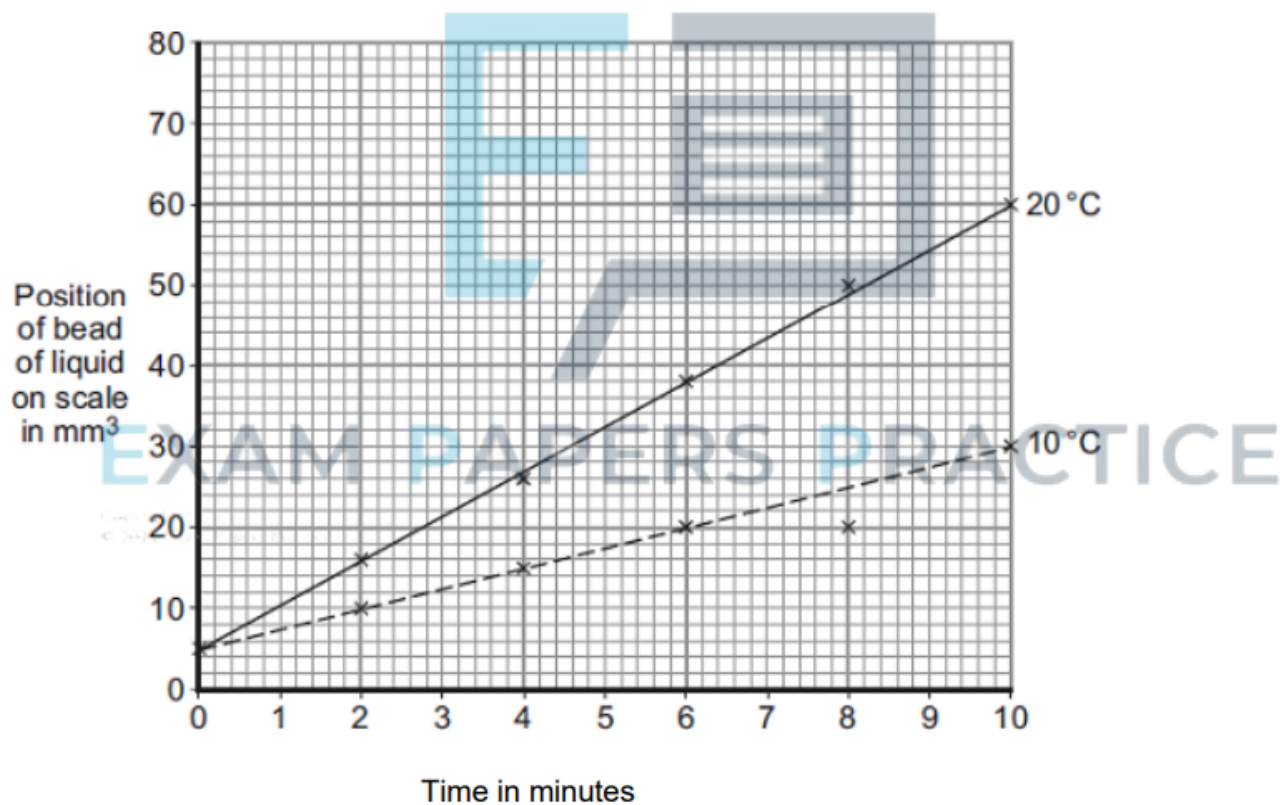
So the earthworms' body temperature would change to 20°C.

(1)

(c) The students then:

- closed the tap
- started a stopwatch
- recorded the position of the bead of liquid every 2 minutes for 10 minutes
- repeated the experiment at 10°C.

The graph shows the students' results.





(i) How much oxygen did the earthworms take in during the 10 minutes at 20°C?

Use information from the graph to work out your answer.

Volume of oxygen taken in = _____ mm³

(2)

(ii) The earthworms took in this volume of oxygen in 10 minutes.

Use your answer from part (c)(i) to calculate how much oxygen the earthworms took in each minute.

Volume of oxygen taken in = _____ mm³
per minute

(1)

(iii) The earthworms took in less oxygen each minute at 10°C than they took in at 20°C.

Explain why.

(2)

(d) When drawing the line on the graph for the experiment at 10°C, the students ignored the reading at 8 minutes.

(i) Suggest why they ignored the reading at 8 minutes.

(1)

(ii) One student suggested they should repeat the experiment twice more at each temperature.

How would repeating the experiment improve the investigation?

(1)

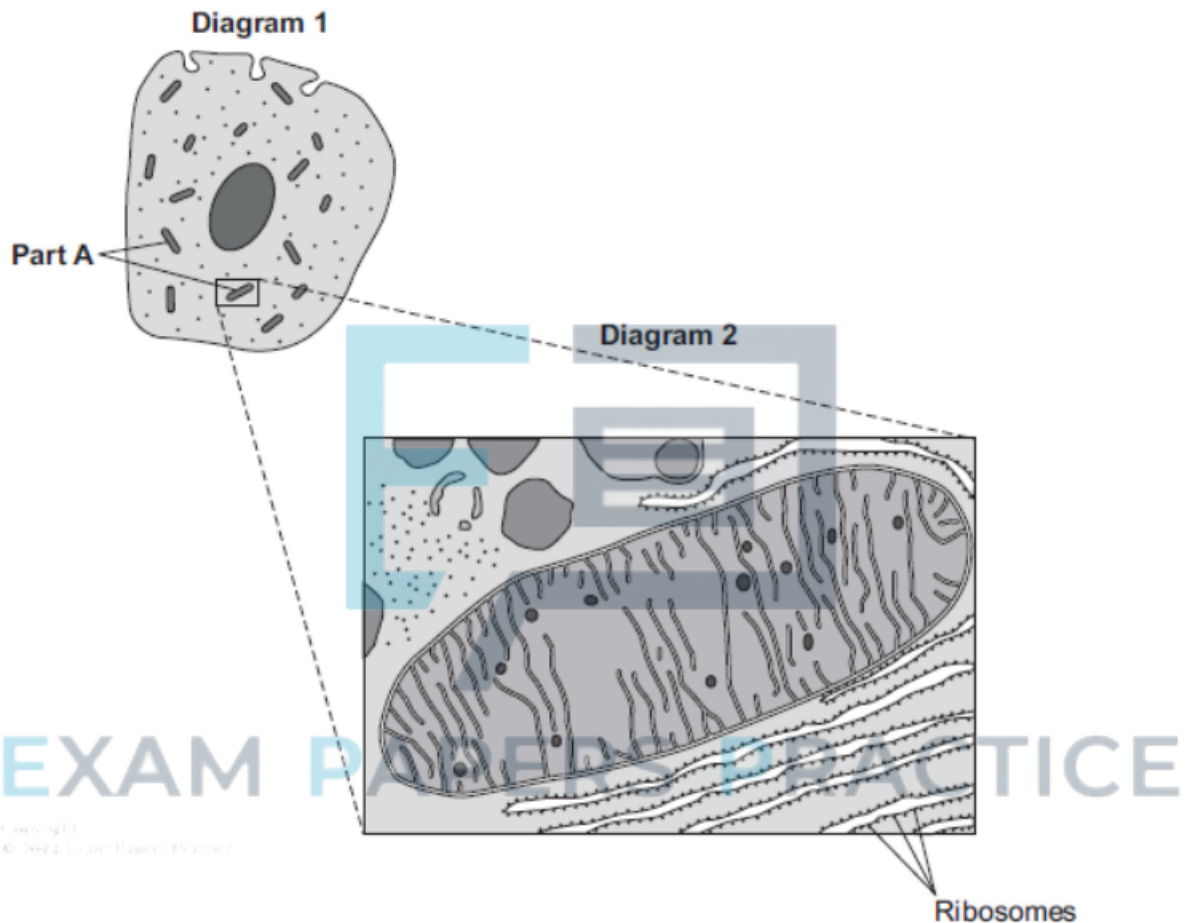
(Total 10 marks)



4.

Diagram 1 shows a cell from the pancreas.

Diagram 2 shows part of the cell seen under an electron microscope.



Part A is where most of the reactions of aerobic respiration happen.

(a) (i) Name part A.

(1)

(ii) Complete the equation for aerobic respiration.

glucose + oxygen \longrightarrow _____ + _____ (+ energy)

(2)

(iii) Part A uses oxygen.

Explain how oxygen passes from the blood to part A.

(3)

(b) The pancreas cell makes enzymes.

Enzymes are proteins.

Describe how the ribosomes and part A help the cell to make enzymes.

EXAM PAPERS PRACTICE

(3)

(Total 9 marks)



5.

(a) The table shows the effect of exercise on the action of one person's heart.

	At rest	During exercise
Heart rate in beats per minute	72	165
Volume of blood leaving the heart in each beat in cm^3	75	120
Heart output in cm^3 per minute	5400	

(i) Calculate the heart output for this person during exercise.

Show clearly how you work out your answer.

EXAM PAPERS PRACTICE

Copyright © 2024 Exam Papers Practice

Answer = _____ cm^3 per minute

(2)



(ii) During exercise, more oxygen is carried to the working muscles.

Explain why this is helpful during exercise.

(2)

(b) Give two other changes in the body that help to increase the amount of oxygen delivered to the working muscles during exercise.

1. _____

2. _____

Copyright © 2024 Exam Papers Practice

(2)

(Total 6 marks)