

**AQA – Infection and response – GCSE Biology Paper 1**

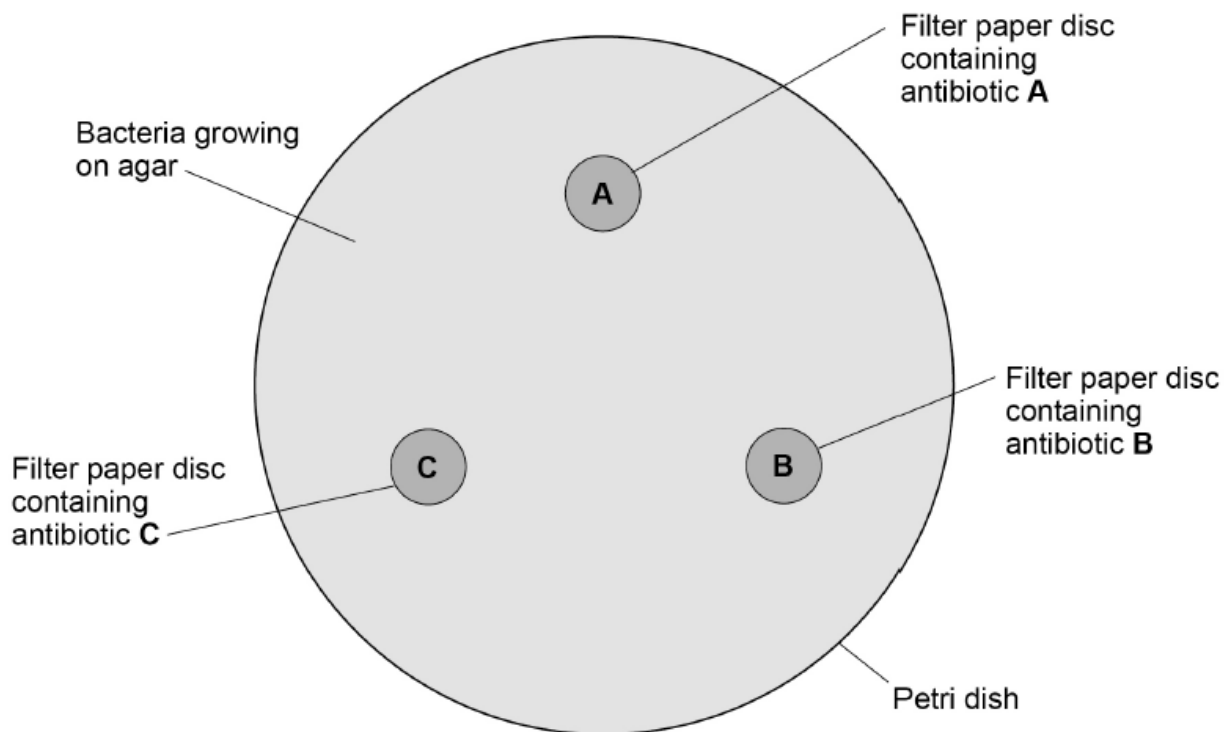
1. June/2021/Paper\_1F/No.8

0 8

A student investigated the effectiveness of three different antibiotics.

Figure 16 shows how the student set up an agar plate.

Figure 16



The student used aseptic techniques to make sure that only one type of bacterium was growing on the agar.

0 8 . 1

Describe **two** aseptic techniques the student should have used.

[2 marks]

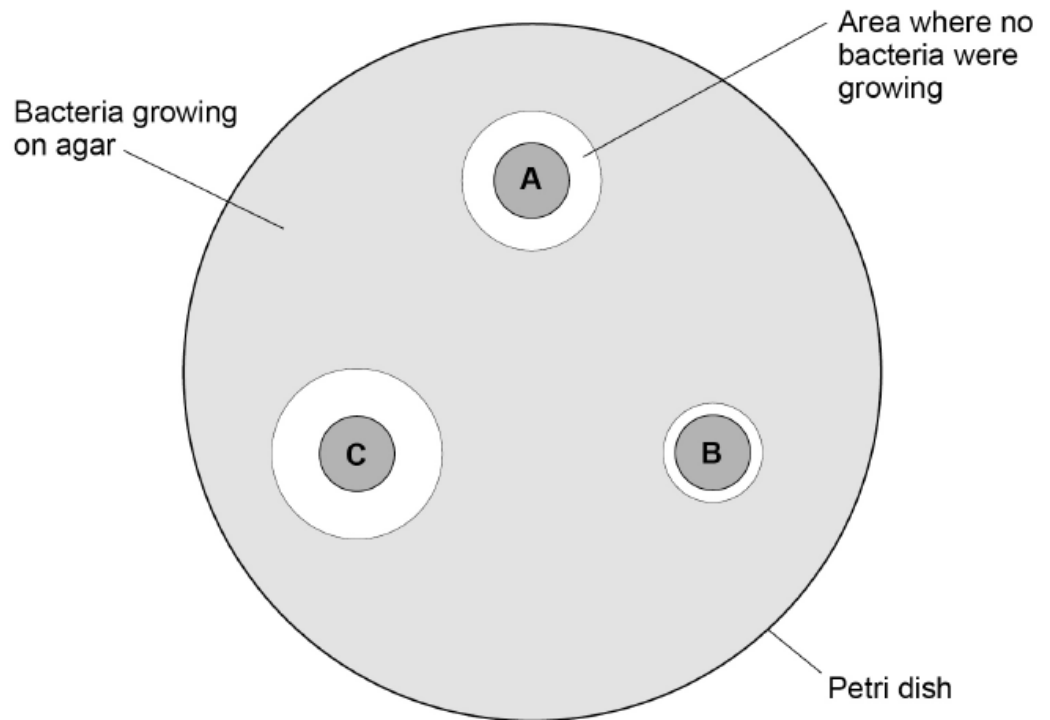
1 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

The student placed the agar plate in an incubator at 25 °C for 48 hours.

Figure 17 shows the agar plate after 48 hours.

Figure 17



0 8 . 2 Which antibiotic is the **least** effective?

Give a reason for your answer.

[1 mark]

Least effective antibiotic \_\_\_\_\_

Reason \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

0 8 . 3 Calculate the area where no bacteria were growing for antibiotic C.

Use  $\pi = 3.14$

Give the unit.

[5 marks]

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Area = \_\_\_\_\_ Unit \_\_\_\_\_

0 8 . 4 Suggest **one** way the student could improve the investigation.

[1 mark]

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## 2. June/2021/Paper\_1H/No.4

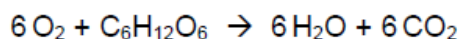
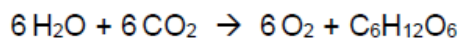
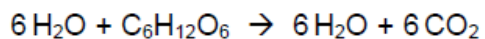
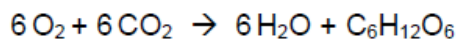
0 4

All living organisms respire.

0 4 . 1

What is the chemical equation for aerobic respiration?

[1 mark]

Tick (✓) **one** box.

0 4 . 2

Name the sub-cellular structures where aerobic respiration takes place.

[1 mark]

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0 4 . 3

Energy is released in respiration.

Give **two** uses of the energy released in respiration.

[2 marks]

1 

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2 

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0 4 . 4 Describe **two** differences between aerobic and anaerobic respiration in humans.

Do **not** refer to oxygen in your answer.

[2 marks]

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

0 4 . 5 What are the **two** products of anaerobic respiration in plant cells?

[2 marks]

Tick (✓) **two** boxes.

Carbon dioxide

Ethanol

Glucose

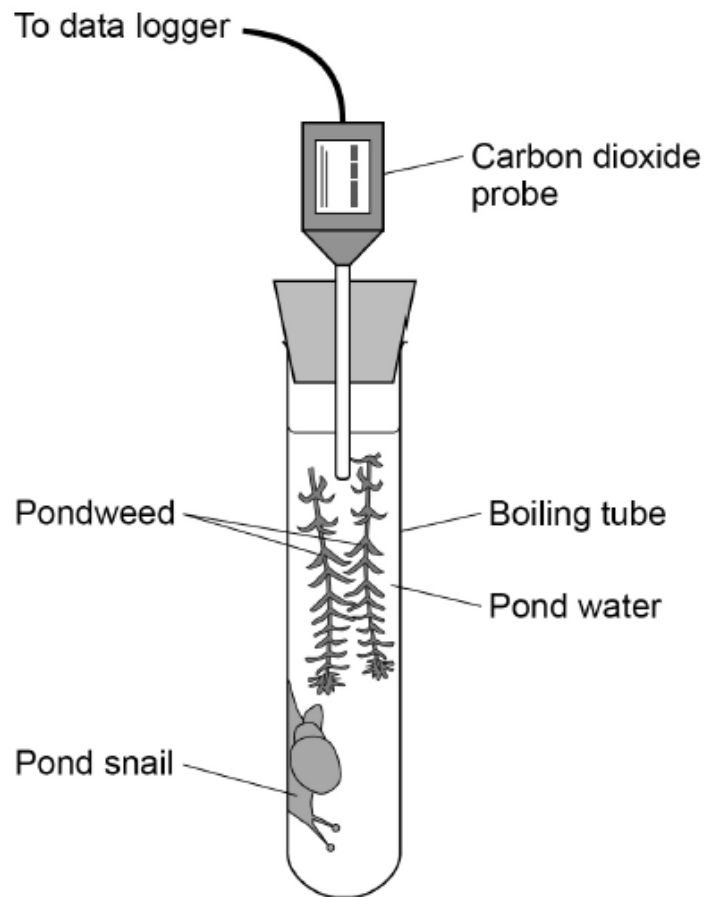
Lactic acid

Water

A scientist investigated respiration and photosynthesis using some pondweed and a pond snail.

Figure 6 shows the apparatus used.

Figure 6



The apparatus was left in a well-lit room for 5 days.

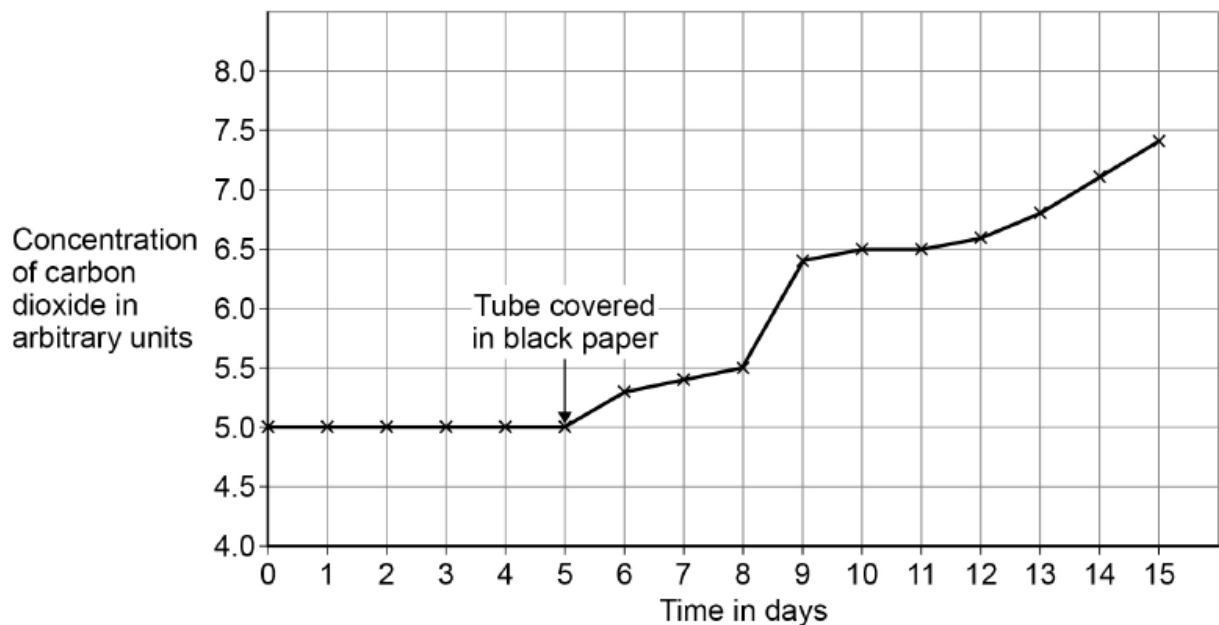
The data logger recorded the concentration of carbon dioxide continuously.

After 5 days, the scientist completely covered the boiling tube with black paper.

The data logger continued to record the concentration of carbon dioxide.

**Figure 7** shows the concentration of carbon dioxide inside the boiling tube over 15 days.

**Figure 7**



**0 4 . 6** Explain why the concentration of carbon dioxide in the tube stayed the same between day 0 and day 5.

**[2 marks]**

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**0 4 . 7** Suggest why the concentration of carbon dioxide increased between day 5 and day 10.

**[1 mark]**

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0 4 . 8 On day 10, the pond snail died.

Explain why the death of the pond snail caused the concentration of carbon dioxide to increase after day 10.

**[3 marks]**

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