AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 4.3.1.5

Protist diseases

Past-paper questions

Tier	**Higher**
Question groups	**2**
Available paper years	**2019–2021**

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.

4.3.1.5 Protist diseases

Question 01

June 2019 | 8464/B/1H | Original Q4

0 4 Pathogens are microorganisms that cause infectious diseases.

0 4 . 1 What type of pathogen causes malaria?

[1 mark]

Tick (✓) **one** box.

- Bacterium ☐
- Fungus ☐
- Protist ☐
- Virus ☐

0 4 . 2 Give **two** methods used to prevent people catching malaria.

Give a reason why each method works.

[4 marks]

Method 1 _____

_____

Reason _____

_____

_____

Method 2 _____

_____

Reason _____

_____

_____

4.3.1.5 Protist diseases

Question 01 · continued

0 4 . 3 Describe **two** differences between a bacterial cell and a eukaryotic cell.

[2 marks]

1 _____

_____

_____

2 _____

_____

_____

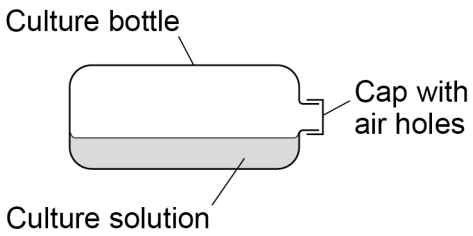
A scientist investigated the population growth of bacteria in a culture solution.

At the start of the investigation the culture solution contained all the nutrients the bacteria needed.

The scientist determined the number of living bacterial cells in the solution every hour over two days.

Figure 5 shows the apparatus used.

Figure 5



0 4 . 4 Describe why there are air holes in the cap of the culture bottle.

[1 mark]

_____

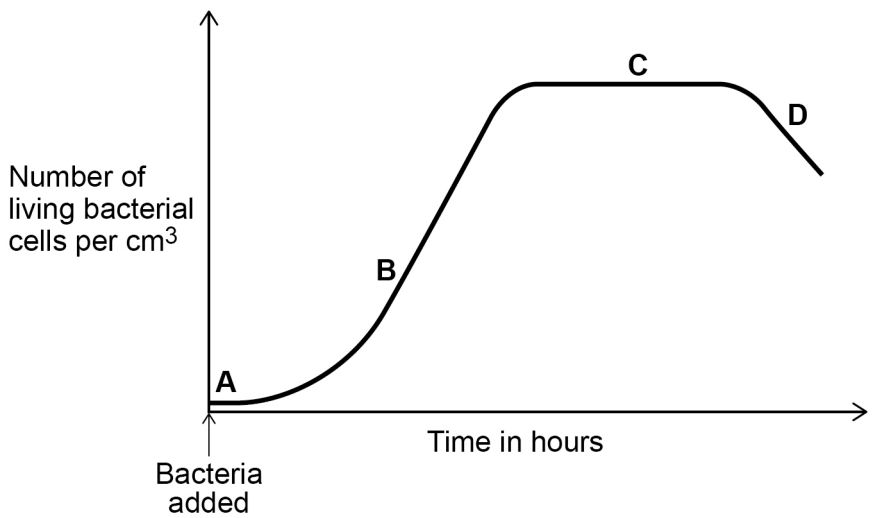
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Question 4 continues on the next page

4.3.1.5 Protist diseases

Figure 6 shows the scientist's results.

Figure 6



0 4 . 5 Give **one** reason for what is happening to the number of bacteria at each of the stages.

[4 marks]

Stage **A** _____

_____

_____

Stage **B** _____

_____

_____

Stage **C** _____

_____

_____

Stage **D** _____

_____

_____

4.3.1.5 Protist diseases

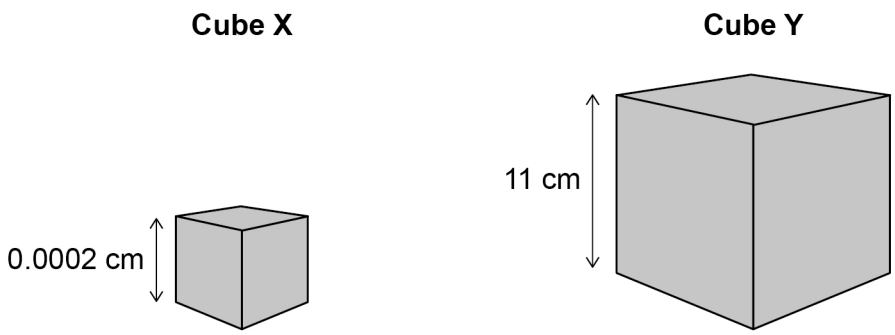
Question 01 · continued

0 4 . 6 **Figure 7** shows two cubes.

Cube **X** represents a bacterial cell.

Cube **Y** represents a small multicellular organism.

Figure 7



A bacterial cell can absorb all the nutrients it needs by diffusion through its outer surface.

Explain why a multicellular organism **cannot** absorb all the nutrients it needs by diffusion through its outer surface.

You **must** include calculations in your answer.

Use **Figure 7**.

[5 marks]

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4.3.1.5 Protist diseases

Question 02

November 2021 | 8464/B/1H | Original Q4

0 4 Pathogens are microorganisms that cause diseases.

Gonorrhoea, malaria and measles are three diseases in humans.

0 4 . 1 Draw **one** line from each disease to the pathogen that causes the disease.

[3 marks]

Disease	Pathogen
	Bacterium
Gonorrhoea	
	Fungus
Malaria	
	Protist
Measles	
	Virus

Question 4 continues on the next page

4.3.1.5 Protist diseases

Question 02 · continued

0 4 . 2 Malaria is transmitted by mosquitos.

Male mosquitos can be sterilised so they are infertile.

The spread of malaria is reduced by releasing sterile mosquitos into the environment.

Explain how releasing sterile mosquitos reduces the spread of malaria.

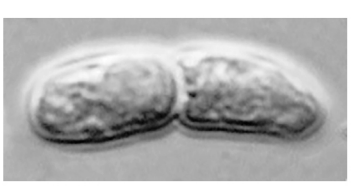
[2 marks]

Pathogens also cause diseases in plants.

Figure 4 shows a rose black spot fungal spore and a tobacco mosaic virus.

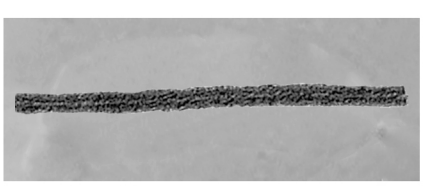
Figure 4

Rose black spot fungal spore



16 µm

Tobacco mosaic virus



2.5×10^{-7} m

Images are **not** to the same scale

0 4 . 3 Name the piece of equipment used to view the virus.

[1 mark]

4.3.1.5 Protist diseases

Question 02 · continued

0 4 . 4 How many times longer is the fungal spore than the virus?

Use **Figure 4**.

[3 marks]

Number of times longer = _____

0 4 . 5 Explain why plants infected with tobacco mosaic virus grow slowly.

[3 marks]

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