

Mircobes and Disease & Ecological Relationships

8C & 8D

26 min

27 marks

Q1-L4, Q2-L4, Q3-L5, Q4-L5, Q5-L6, Q6-L6

1. Michael cut his knee while he was playing football.



A first-aider put a bandage over the cut.

- (a) A bandage helps to stop a cut getting dirty or infected.
Give the name of **one** type of micro-organism which can infect a cut.

.....

1 mark

- (b) While he was cleaning Michael's knee, the first-aider wore rubber gloves.

- (i) Give **one** reason why wearing rubber gloves is important for the first-aider's health.

.....
.....

1 mark

- (ii) Give **one** reason why it is important for Michael's health that the first-aider wears rubber gloves.

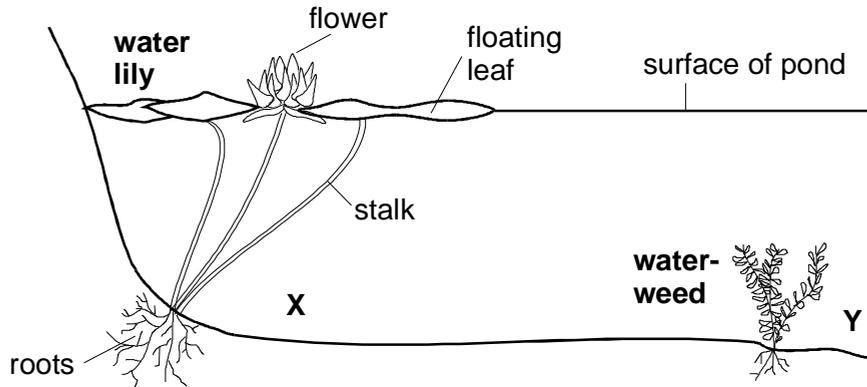
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1 mark

Maximum 3 marks

2. The drawing shows a water lily and some waterweed growing in a pond.



- (a) Waterweed grows well at **Y** but not at **X**. Why is this?

Tick the correct box.

There is not enough food at **X**.

There is not enough light at **X**.

There is not enough oxygen at **X**.

There is not enough water at **X**.

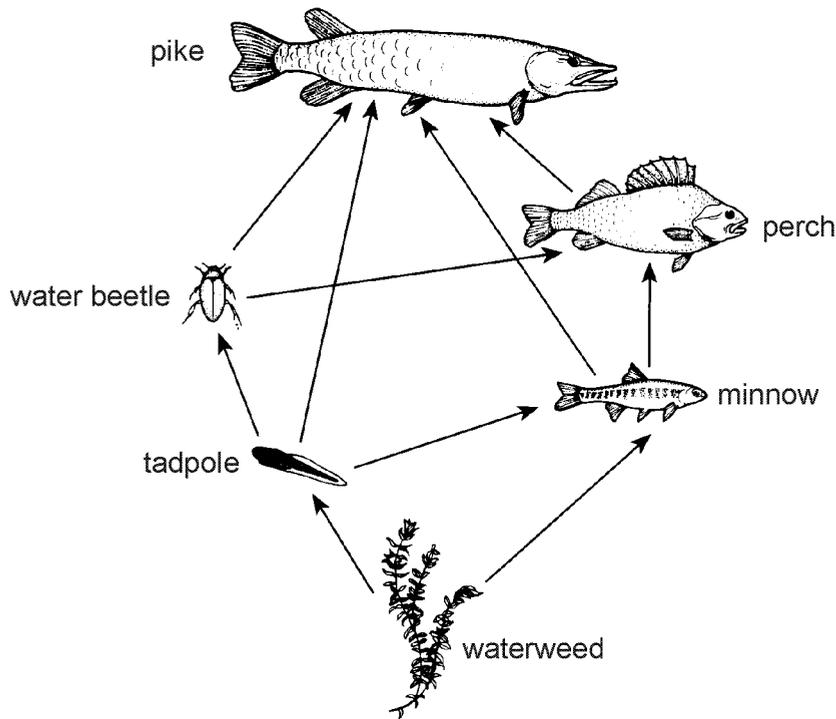
1 mark

- (b) Which **named** part of the water lily produces seeds?

.....

1 mark

- (c) The drawing shows part of a food web in a pond. Use the information in the drawing to answer the questions.



- (i) Write **three** names from the food web to make a food chain which ends with pike.

..... → → → **pike**

1 mark

- (ii) Write the name of **one** predator in the food web and the name of **one** of its prey.

Predator:

Prey:

2 marks

- (d) Fish have gills and fins. How do these help the fish to live in water?

Gills are for

.....

Fins are for

.....

2 marks

Maximum 7 marks

3. Spots may be caused by bacteria in the skin. A researcher investigated the effect of spot-lotion on bacteria.

(a) He grew bacteria on the surface of jelly in a Petri dish.

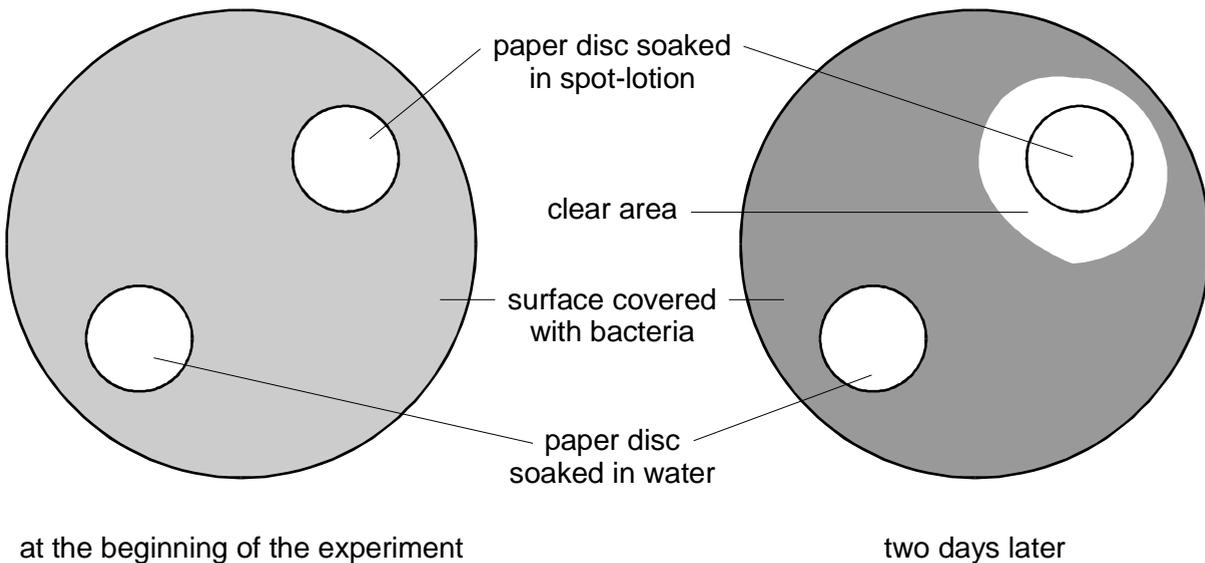
At what temperature would the bacteria reproduce quickly?

Tick the correct box.

100°C	<input type="checkbox"/>	4°C	<input type="checkbox"/>
37°C	<input type="checkbox"/>	-15°C	<input type="checkbox"/>

1 mark

(b) The researcher placed two small paper discs onto the surface of the jelly. One disc had been soaked in spot-lotion. The other disc had been soaked in water. The diagrams below show the jelly at the beginning of the experiment and two days later.



Suggest what had happened to the bacteria in the clear area around the paper disc soaked in spot-lotion.

.....
.....

1 mark

(c) What was the control in this experiment?

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.....

1 mark

(d) Give **two** safety precautions the researcher should take to avoid contact with the bacteria.

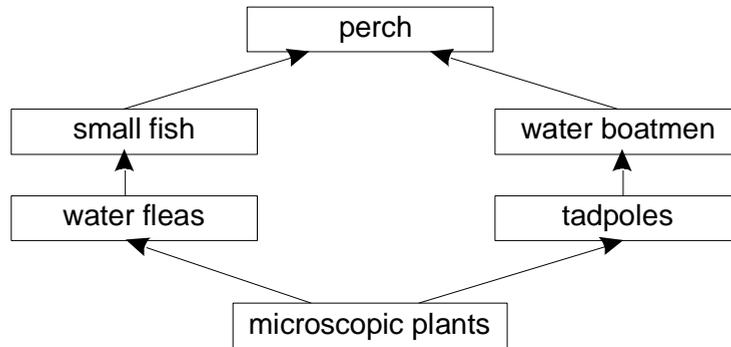
1.
2.

2 marks

Maximum 5 marks

4. A pupil studied the organisms in a pond.

From her observations she drew this simple food web.



(a) Use **only** the information in the food web to answer the following.

(i) Write down **one** food chain from this food web. There should be **four** organisms in the food chain.

..... → → →

1 mark

(ii) Write down the **producer** in the food web.

.....

1 mark

(b) Disease suddenly kills all the small fish. Complete the sentence to explain what is likely to happen to the number of water boatmen.

The number of water boatmen is likely to

because

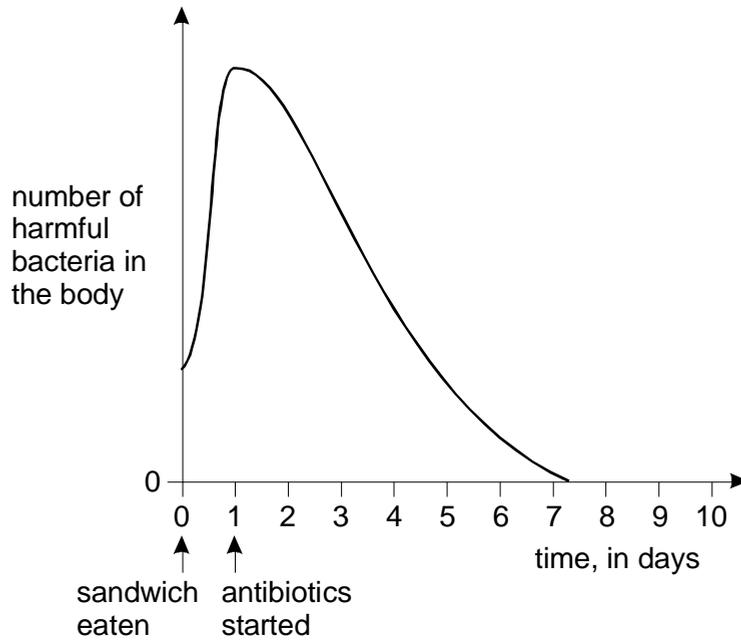
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2 marks

Maximum 4 marks

5. One evening Jenny and Leah ate chicken sandwiches which had been in their school bags all day. There were harmful bacteria in the food. The next day both girls became very ill. Their doctor gave them antibiotics to take for eight days.

The graph represents how antibiotics affect the number of bacteria in the body.



- (a) Use the graph to explain why the girls did **not** become ill until the day after eating the sandwiches.

.....

1 mark

- (b) After taking the antibiotics for eight days Jenny was completely better. Explain why she got better.

.....

1 mark

- (c) Leah should have taken the antibiotics for eight days. She felt much better after five days and stopped taking the antibiotics. Two days later she felt very ill again. Use the graph to help you explain why Leah became ill again.

.....

2 marks

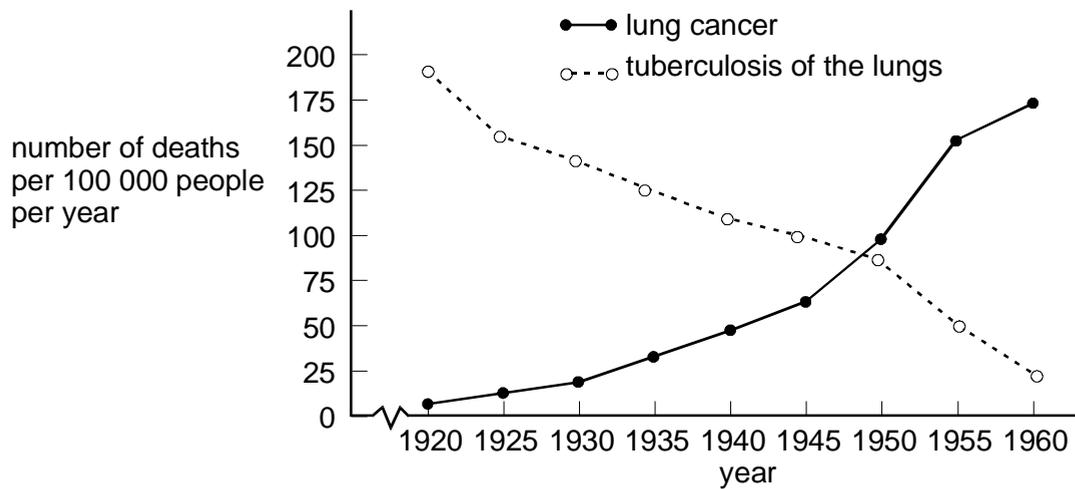
- (d) Food will keep longer if it is placed in a refrigerator at 2°C.
Refrigeration does **not** kill bacteria.
What effect does the low temperature have on bacteria?

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.....

1 mark

Maximum 5 marks

6. (a) The graphs show the number of deaths from lung cancer and from tuberculosis of the lungs, in England and Wales, between 1920 and 1960.



(Data obtained from *Key Science Biology*, Applin; published by Stanley Thornes 1994)

- (i) Between which two dates on the graph did the number of deaths from lung cancer rise fastest?

..... and

1 mark

- (ii) Lung cancer may be caused by cigarette smoking.

What substance in cigarette smoke causes lung cancer?

.....

1 mark

- (b) The number of deaths from tuberculosis of the lungs went down because of better medical treatment and preventive medicine.

What type of treatment is given to young people nowadays to prevent them from getting tuberculosis?

.....
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1 mark

Maximum 3 marks