

External assessment 2022

Question and response book

# Biology

## Paper 1

### Time allowed

- Perusal time — 10 minutes
- Working time — 90 minutes

### General instructions

- Answer all questions in this question and response book.
- QCAA-approved calculator permitted.
- Planning paper will not be marked.

### Section 1 (20 marks)

- 20 multiple choice questions

### Section 2 (22 marks)

- 8 short response questions

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School code

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School name

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Given name/s

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Family name

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Book

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of

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books used

Attach your  
barcode ID label  
here

# Section 1

## Instructions

- Choose the best answer for Questions 1–20.
- This section has 20 questions and is worth 20 marks.
- Use a 2B pencil to fill in the A, B, C or D answer bubble completely.
- If you change your mind or make a mistake, use an eraser to remove your response and fill in the new answer bubble completely.

	A	B	C	D
Example:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	A	B	C	D
1.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	A	B	C	D
11.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Section 2

### Instructions

- Write using black or blue pen.
  - If you need more space for a response, use the additional pages at the back of this book.
    - On the additional pages, write the question number you are responding to.
    - Cancel any incorrect response by ruling a single diagonal line through your work.
    - Write the page number of your alternative/additional response, i.e. See page ...
    - If you do not do this, your original response will be marked.
  - This section has eight questions and is worth 22 marks.
- 

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Do not write outside this box.

## Question 21 (2 marks)

Describe two reproductive strategies used to distinguish K-strategists from r-strategists.

Strategy 1: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Strategy 2: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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## Question 22 (2 marks)

Explain how two abiotic factors affect the distribution of species in an ecosystem.

Ecosystem: \_\_\_\_\_

\_\_\_\_\_

Abiotic factor 1: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Abiotic factor 2: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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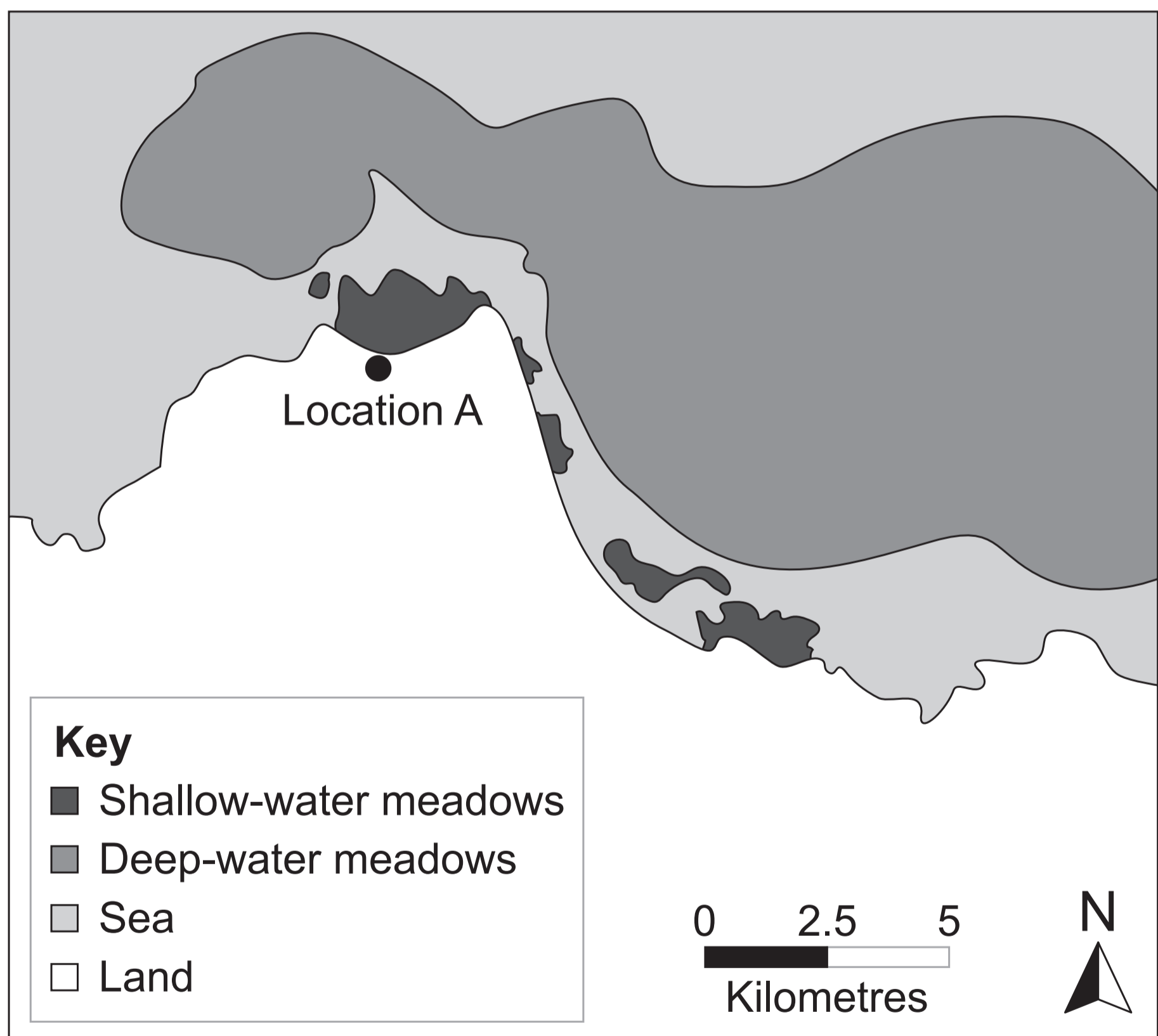




## Question 25 (4 marks)

Severe weather events have caused widespread loss of seagrass in meadows off Location A.

Seagrasses have the capacity to recover from weather-associated disturbances and return to pre-impact levels within 4 to 60 months. Deep-water meadows have a higher rate of recovery than shallow-water meadows.



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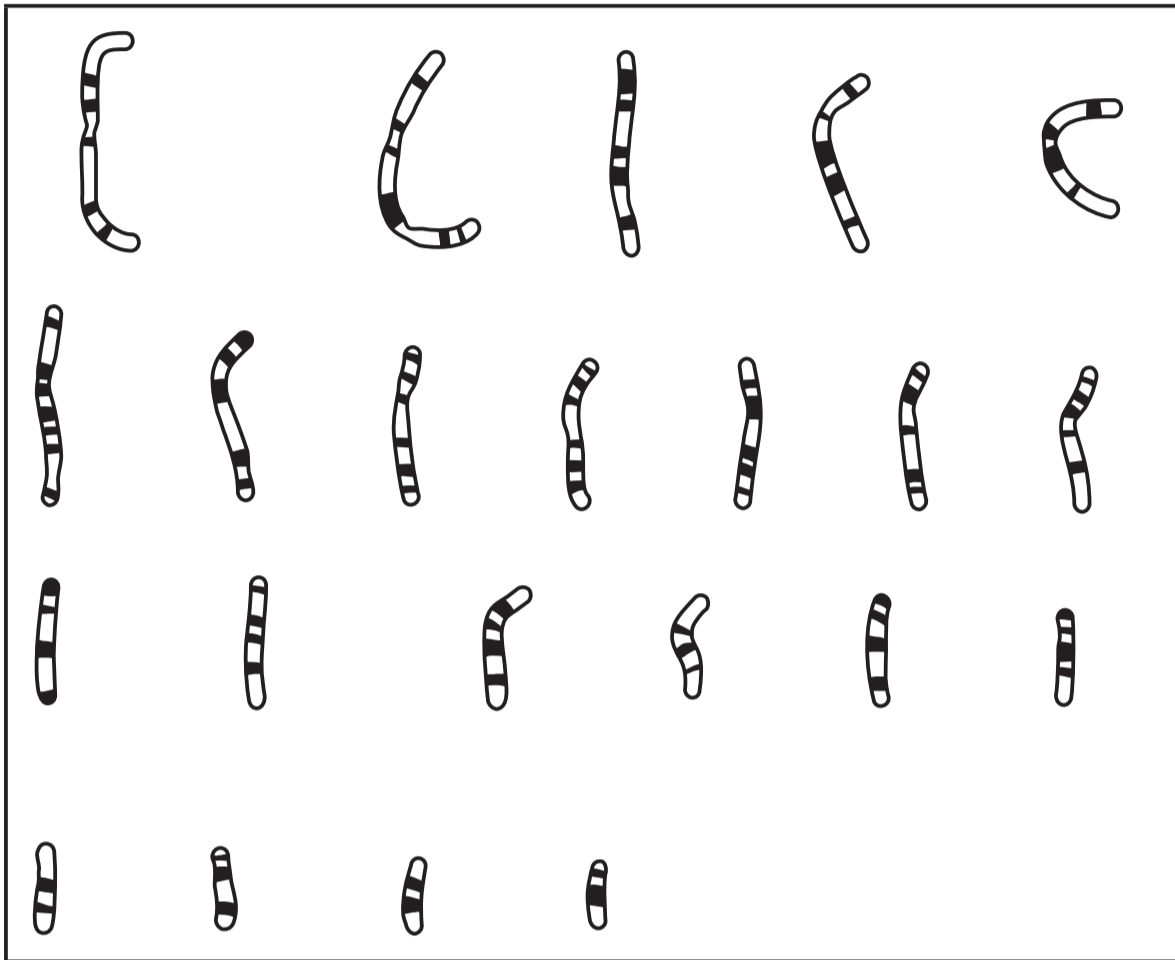
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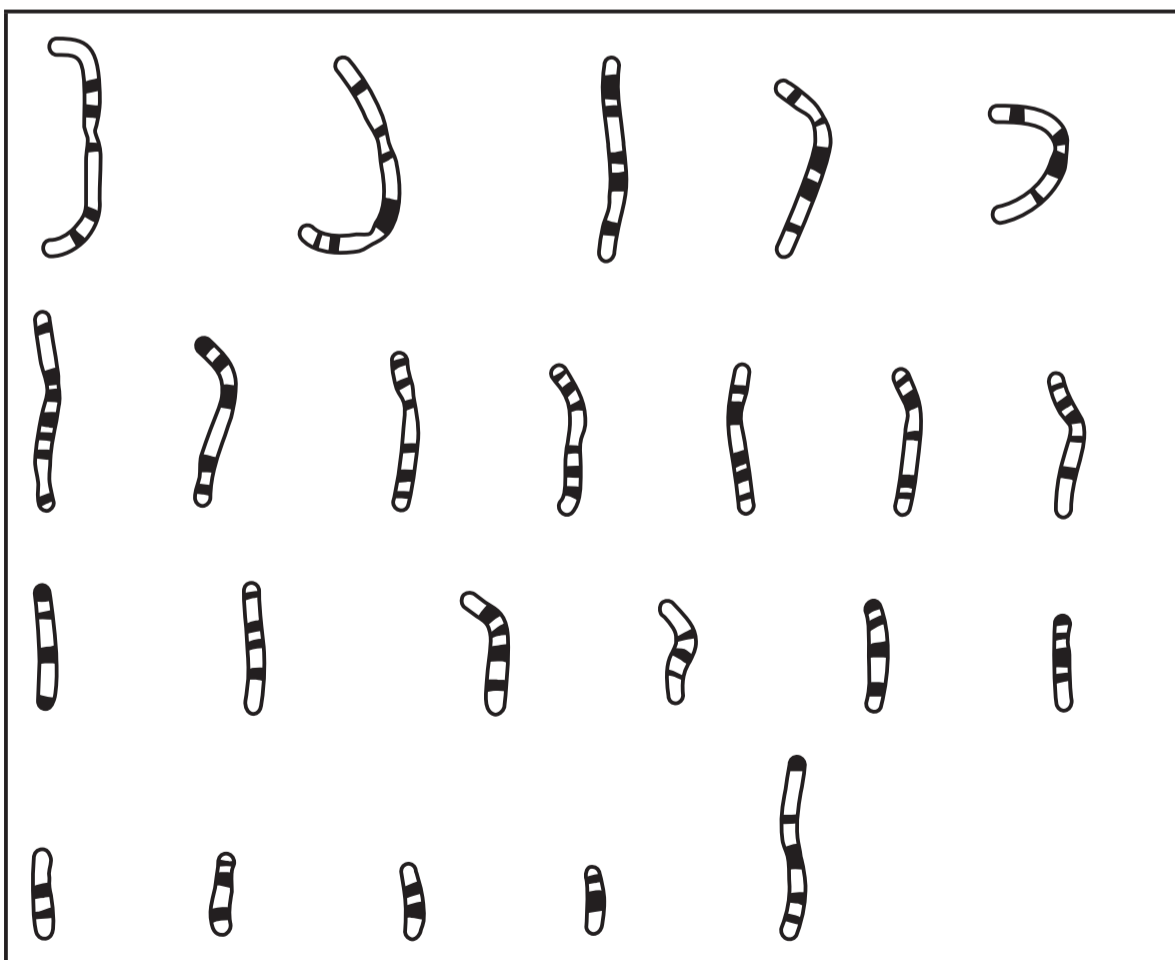
## Question 26 (4 marks)

Karyotypes for two human gametes are shown.

Karyotype A (sperm cell)



Karyotype B (egg cell)



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This table lists some genetic conditions resulting from chromosomal abnormalities.

<b>Genetic condition</b>	<b>Common name</b>
Monosomy 5	Cri du chat syndrome
Monosomy X	Turner syndrome
Trisomy 13	Patau syndrome
Trisomy 18	Edwards syndrome
Trisomy X	Triple X syndrome

c) Predict which genetic condition would occur if the two gametes produced a zygote. [1 mark]

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**Question 27 (2 marks)**

Explain the purpose of gel electrophoresis in DNA profiling.

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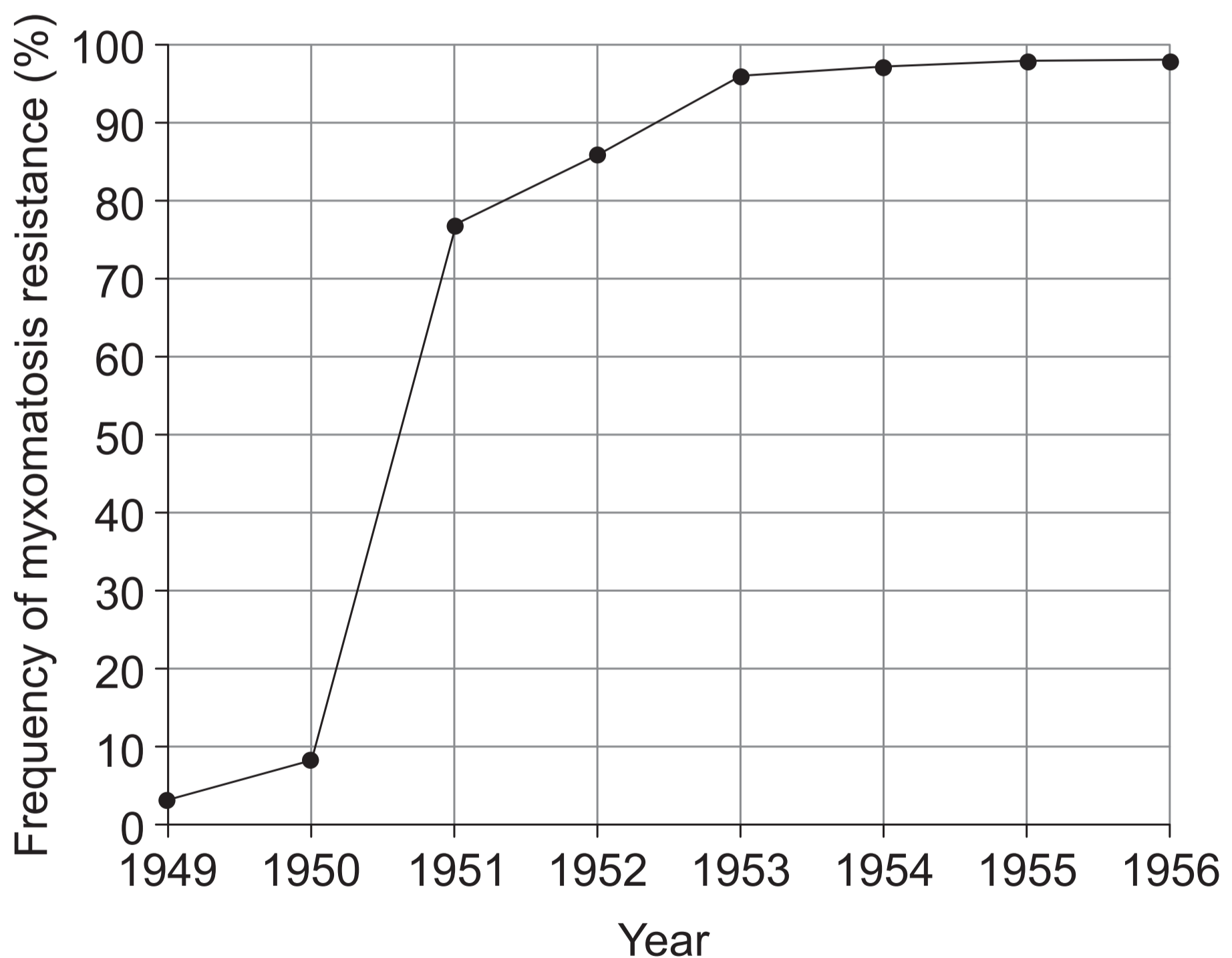
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### Question 28 (3 marks)

In 1950, the myxoma virus was released into Australian pest rabbit populations to reduce their numbers. The resulting disease, myxomatosis, initially wiped out 95% of the rabbit population; however, it quickly became less effective as a population control measure.

This graph shows the frequency of myxomatosis resistance in Australia's rabbit population from 1949 to 1956.



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