

Biology B
Advanced
PAPER 1: Advanced Biochemistry, Microbiology and Genetics

Wednesday 5 June 2024 – Afternoon

Time: 1 hour 45 minutes

Diagram Booklet

THIS DIAGRAM BOOKLET MUST BE RETURNED WITH THE QUESTION PAPER AT THE END OF THE EXAMINATION.

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

INSTRUCTIONS

There may be spare copies of some diagrams in case you need them.

CONTENTS

Page

3	Question 1(a)
4	Question 3(b)
5	Question 5(d)(i)
6	Question 5(d)(ii)
7	Question 6(c)
8	Question 6(d)
9	Question 7
10	Question 7(b)
11	Question 7(c)
12–14	Question 7(c)(ii)
15	Question 8(b)
16	Question 9(a)
17	Question 9(b)

Spare Copies

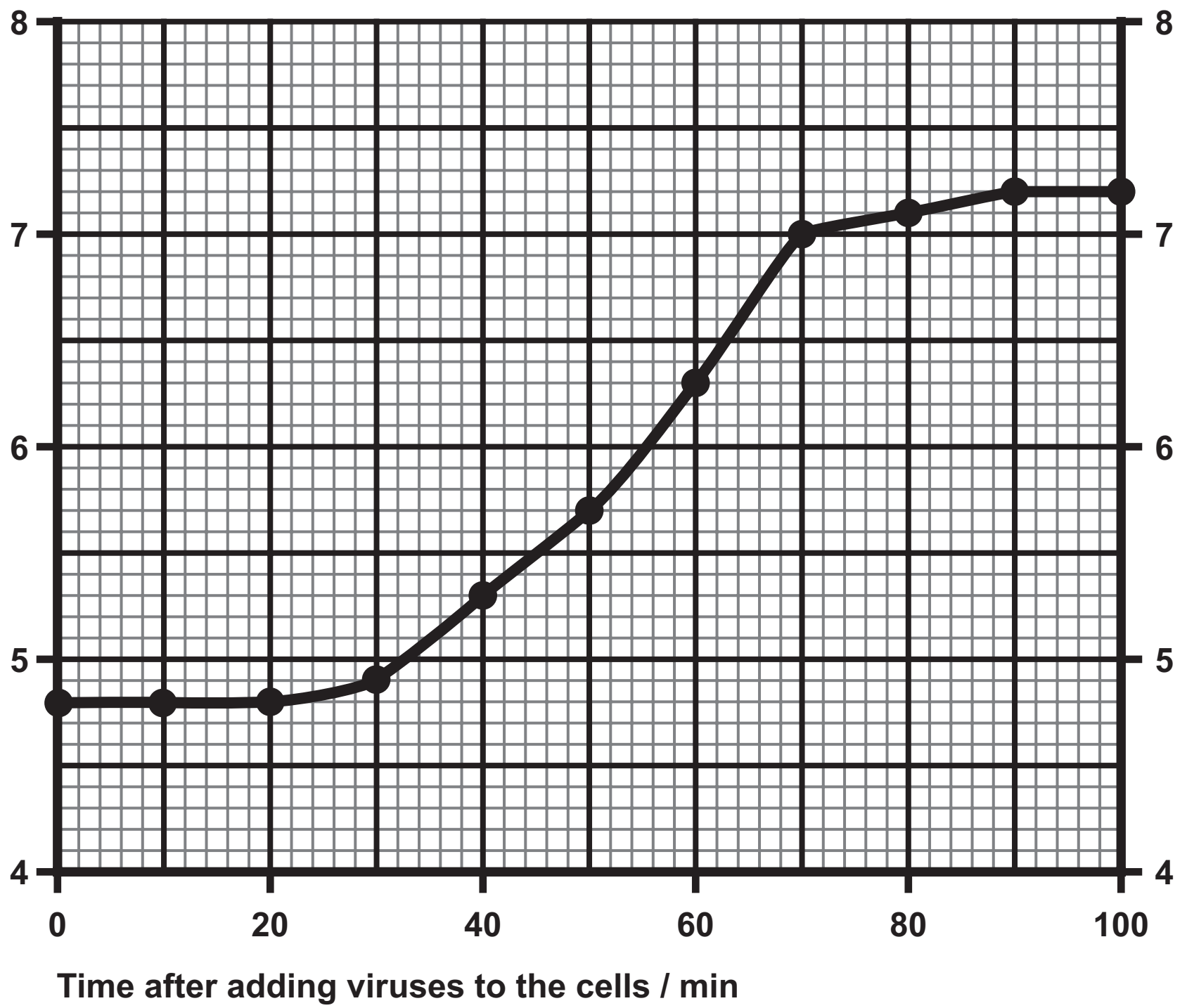
18	Question 1(a)
19	Question 8(b)

Question 1(a)

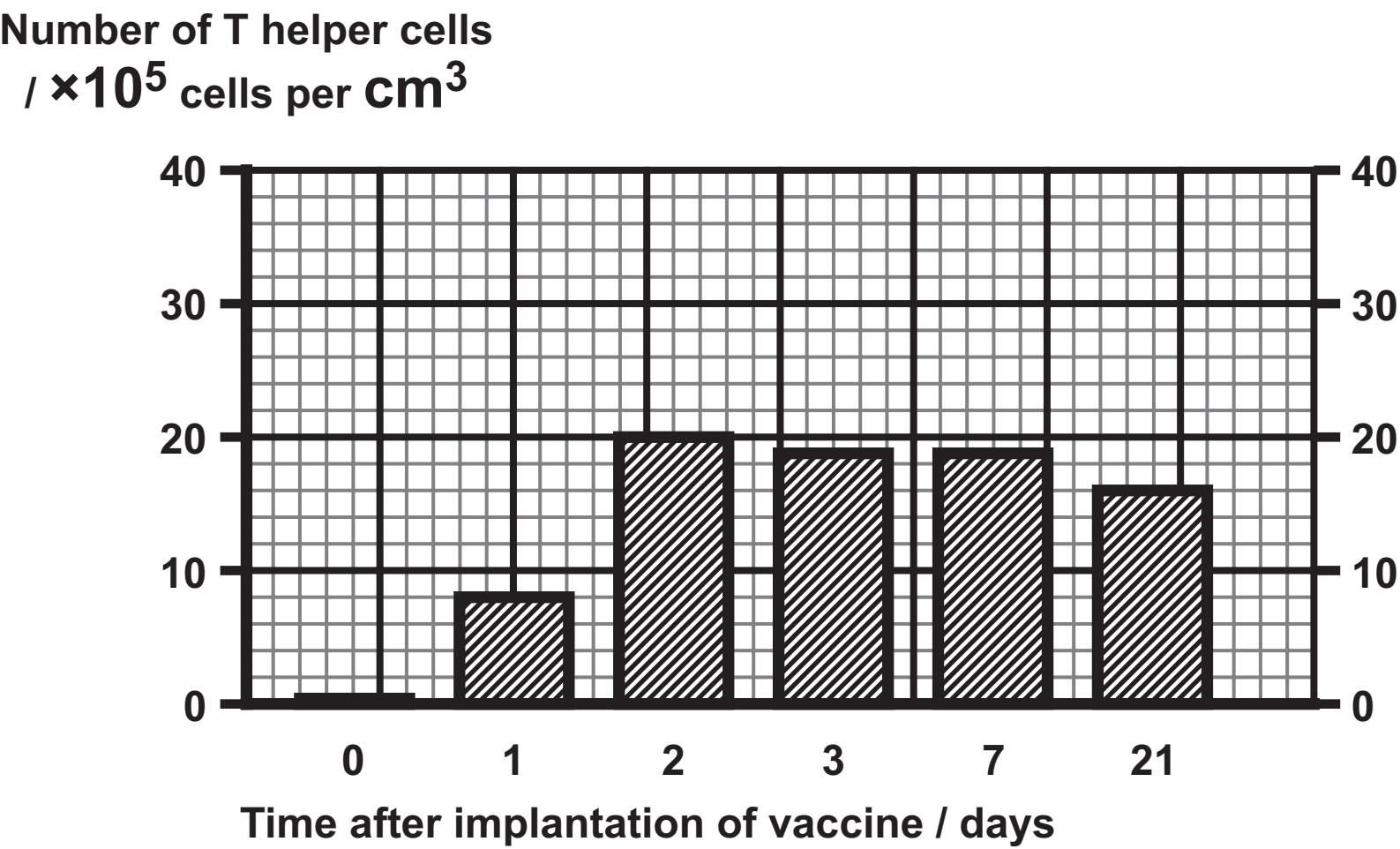
Features of blood vessels	Type of blood vessel			
	both capillaries and veins	capillaries only	veins only	neither capillaries nor veins
Endothelial cells				
Valves				

Question 3(b)

Log_{10} number of viruses



Question 5(d)(i)



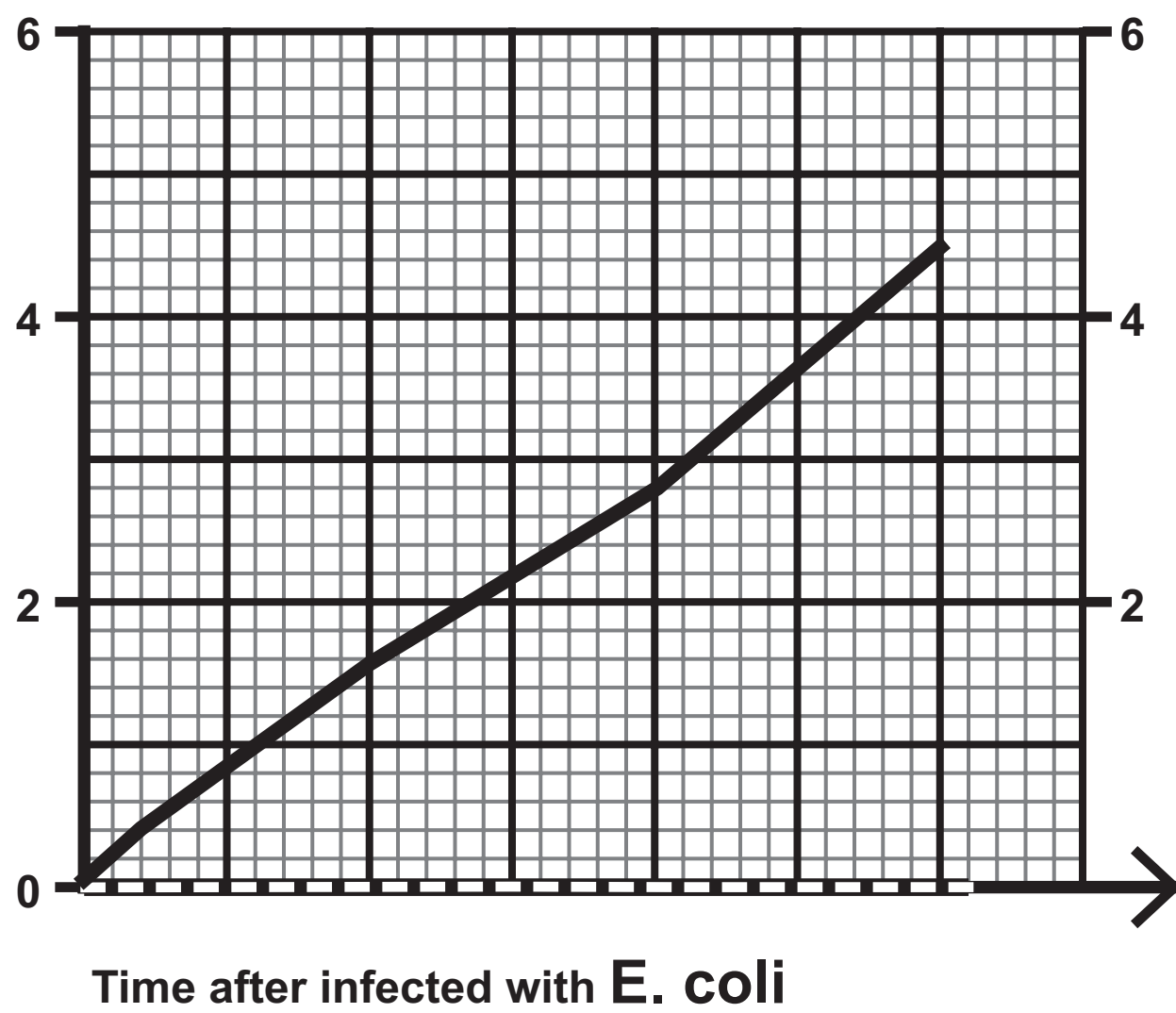
Question 5(d)(ii)

KEY

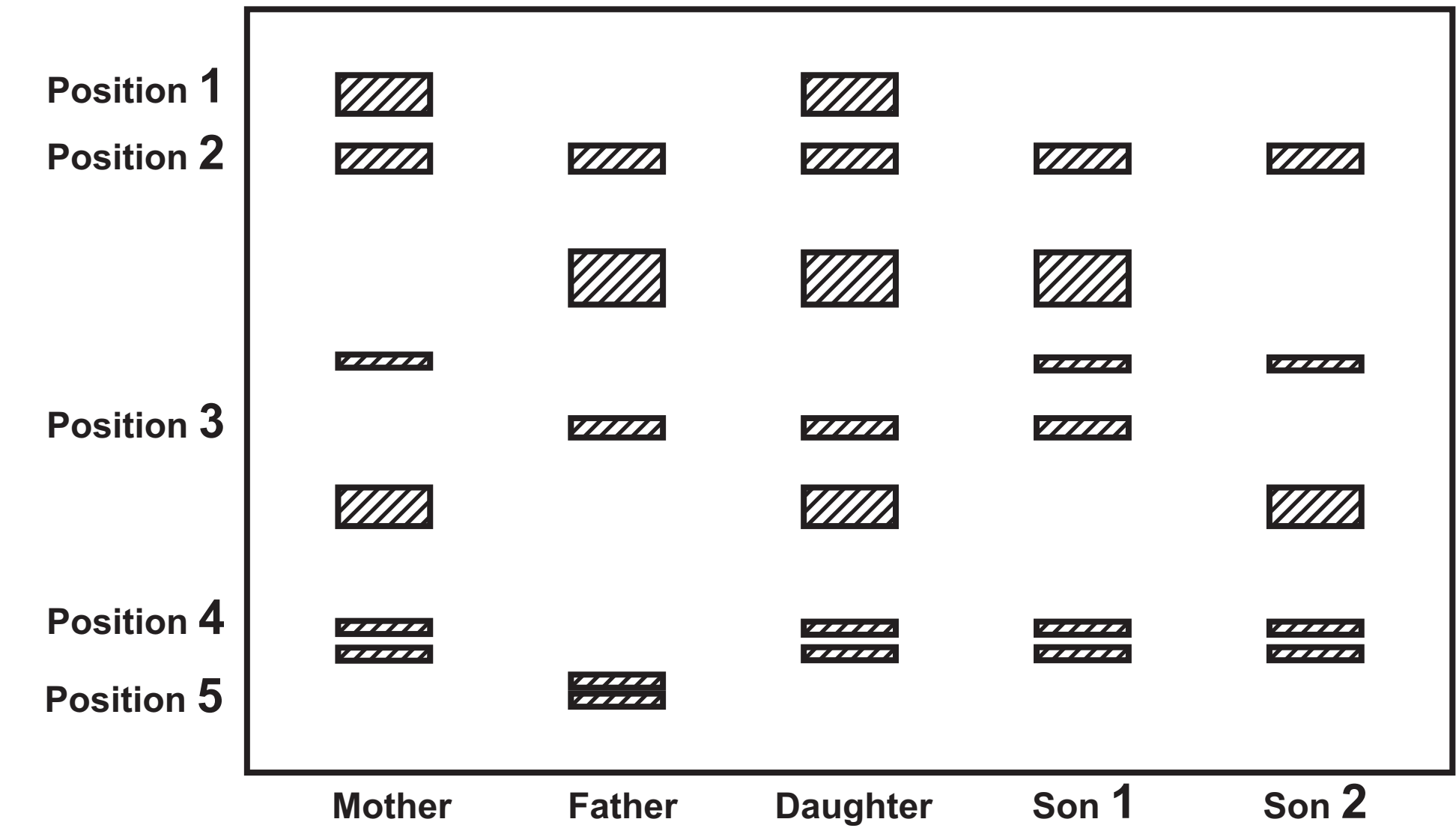
———— mice with vaccine implanted

▤▤▤▤ control group of mice

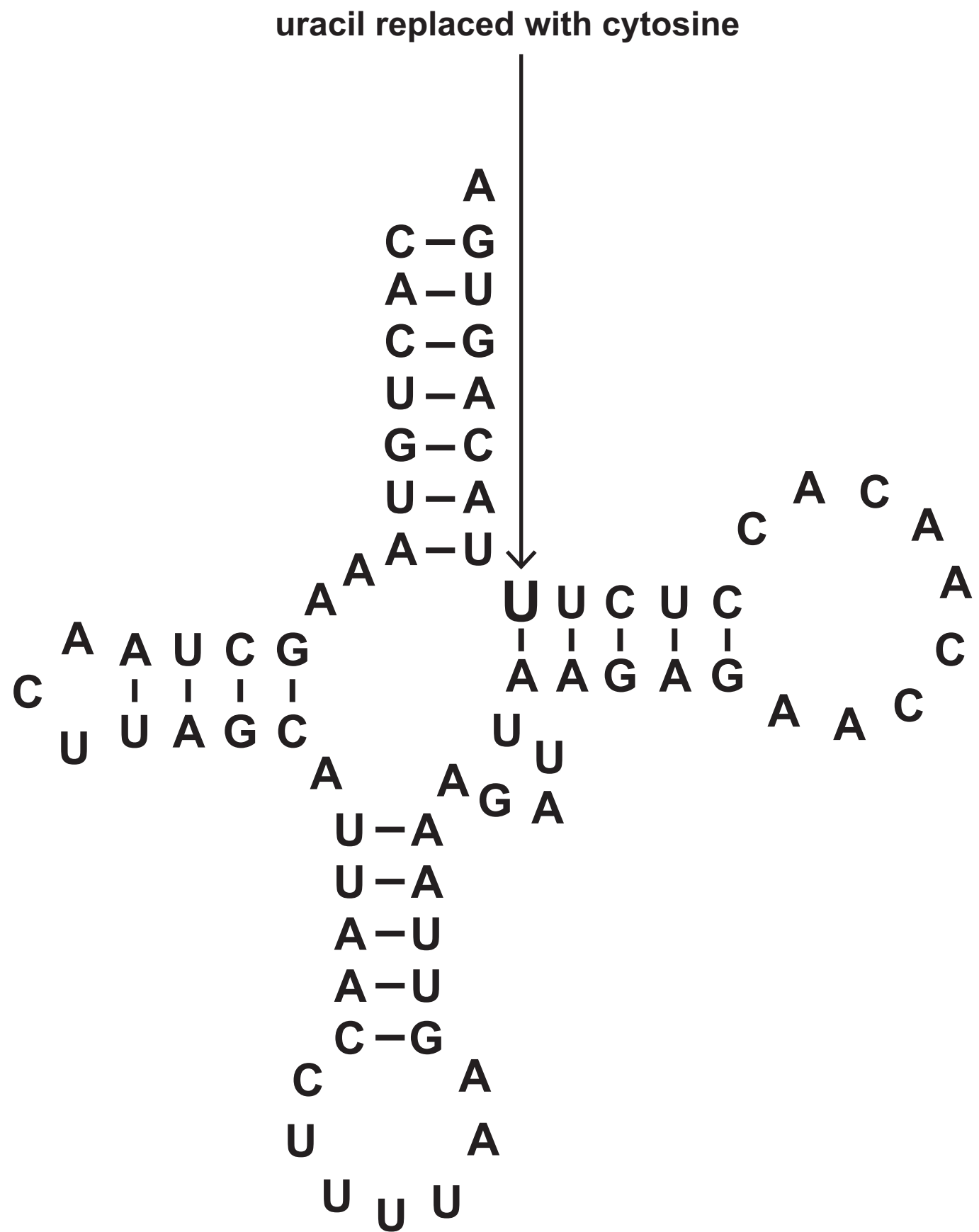
Concentration
of antibody / a.u.

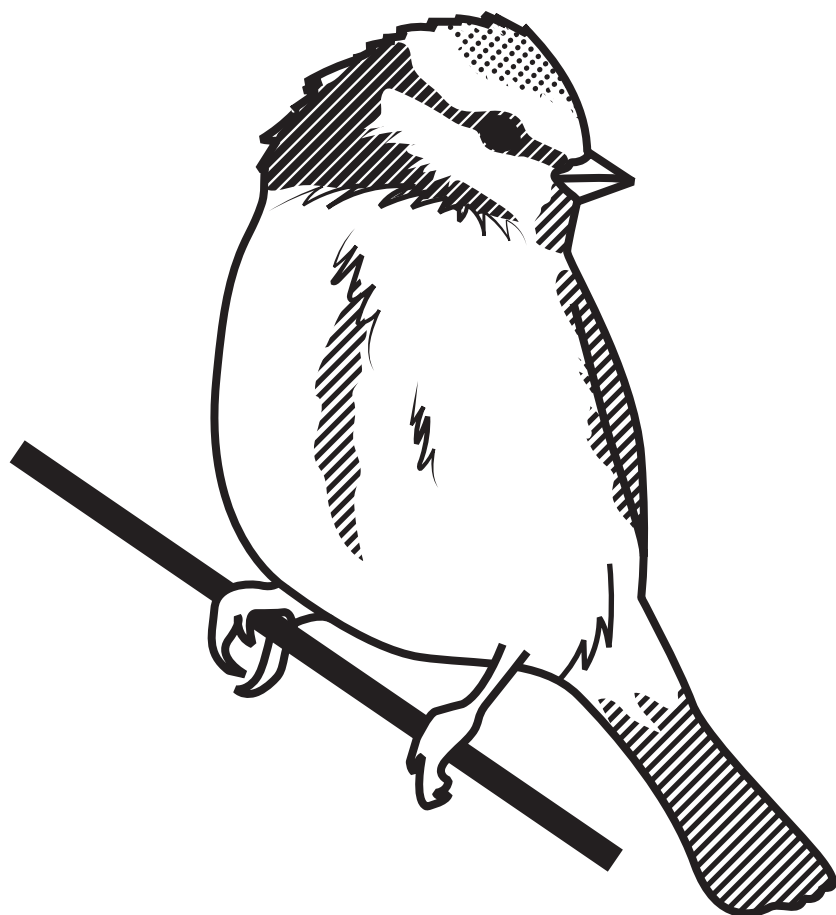


Question 6(c)



Question 6(d)

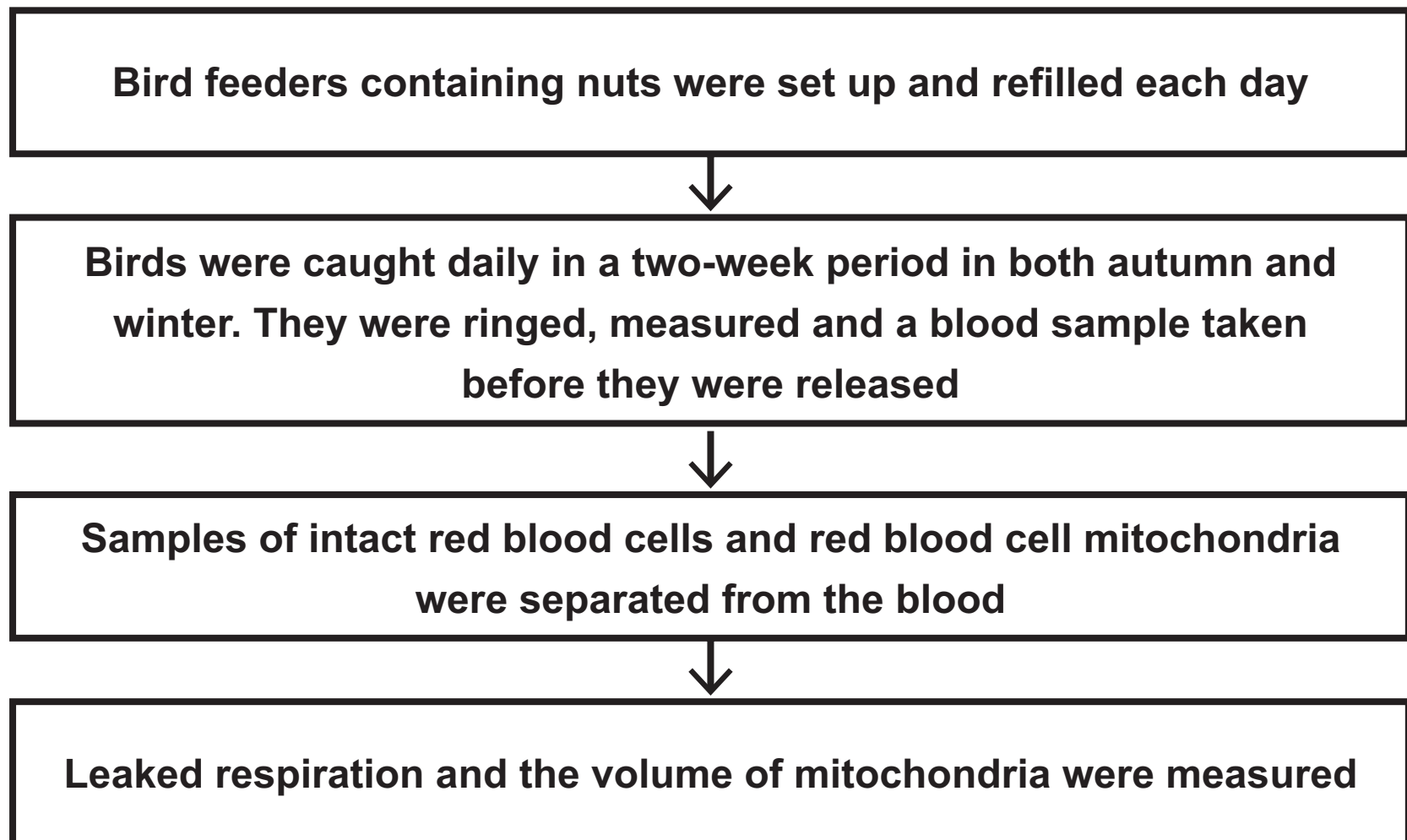


Question 7**PHOTOGRAPH OF BLUE TIT****LINE DRAWING OF BLUE TIT**

Question 7(b)

Species of bird	Length from head to tail / cm	Wing span / cm	Mass / g
Coal tit	11	19	11
Blue tit	12	18	11
Great tit	14	24	18

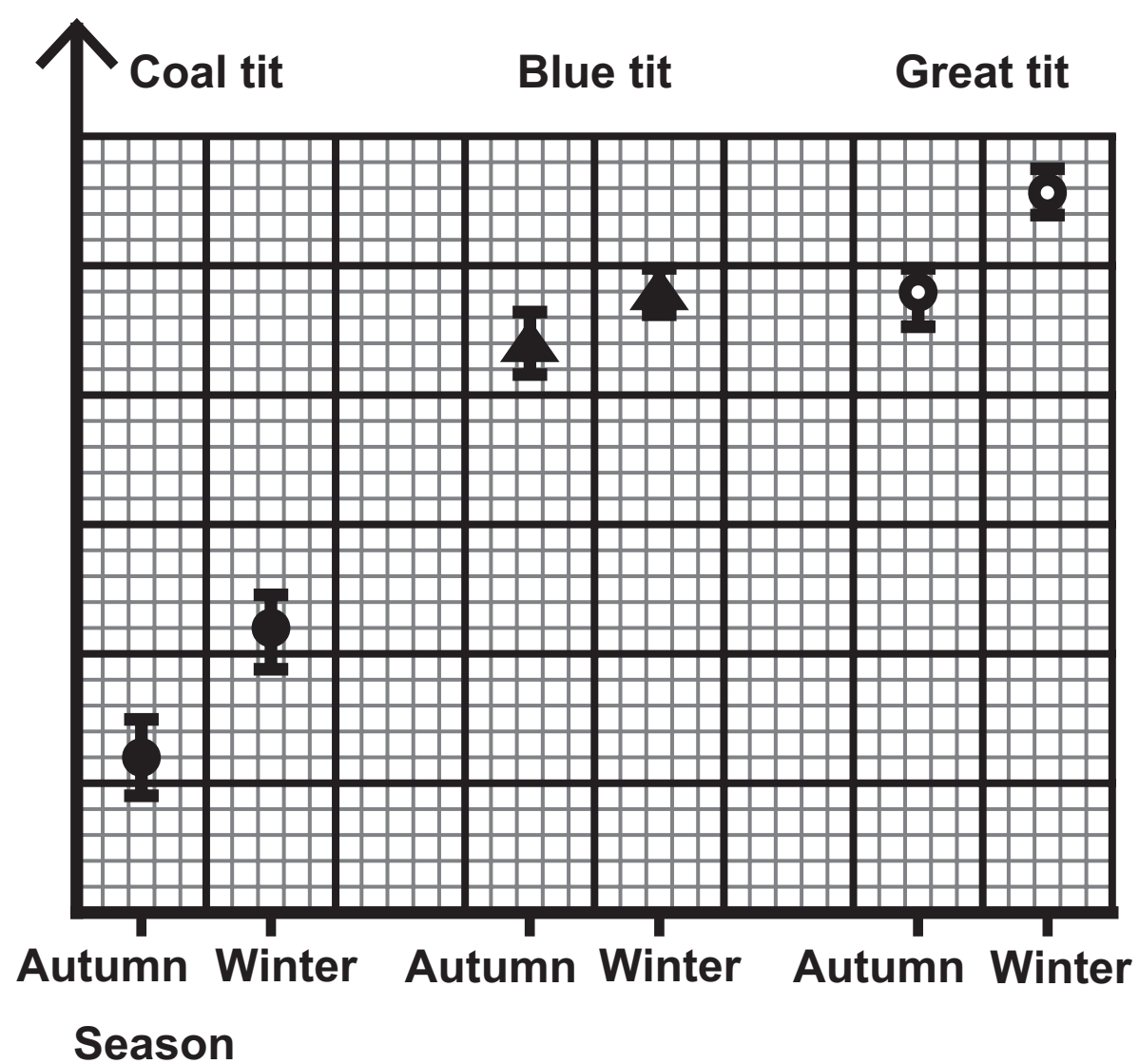
Question 7(c)



Question 7(c)(ii)

GRAPH 1: VOLUME OF MITOCHONDRIA

Mean volume of mitochondria
in red blood cells

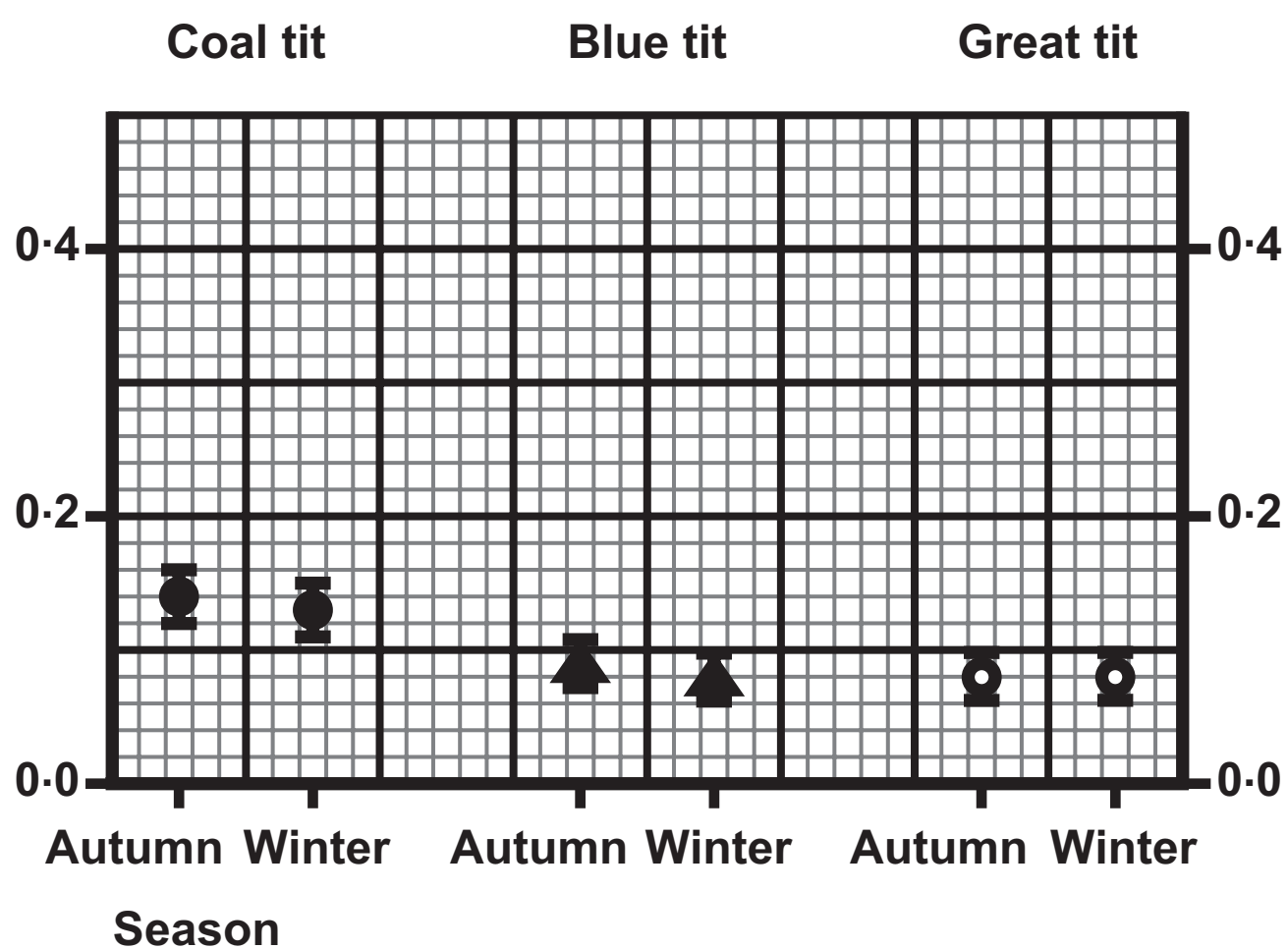


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Question 7(c)(ii) continued

GRAPH 2: RESPIRATION PRODUCING ATP

Mean rate of
respiration / a.u.

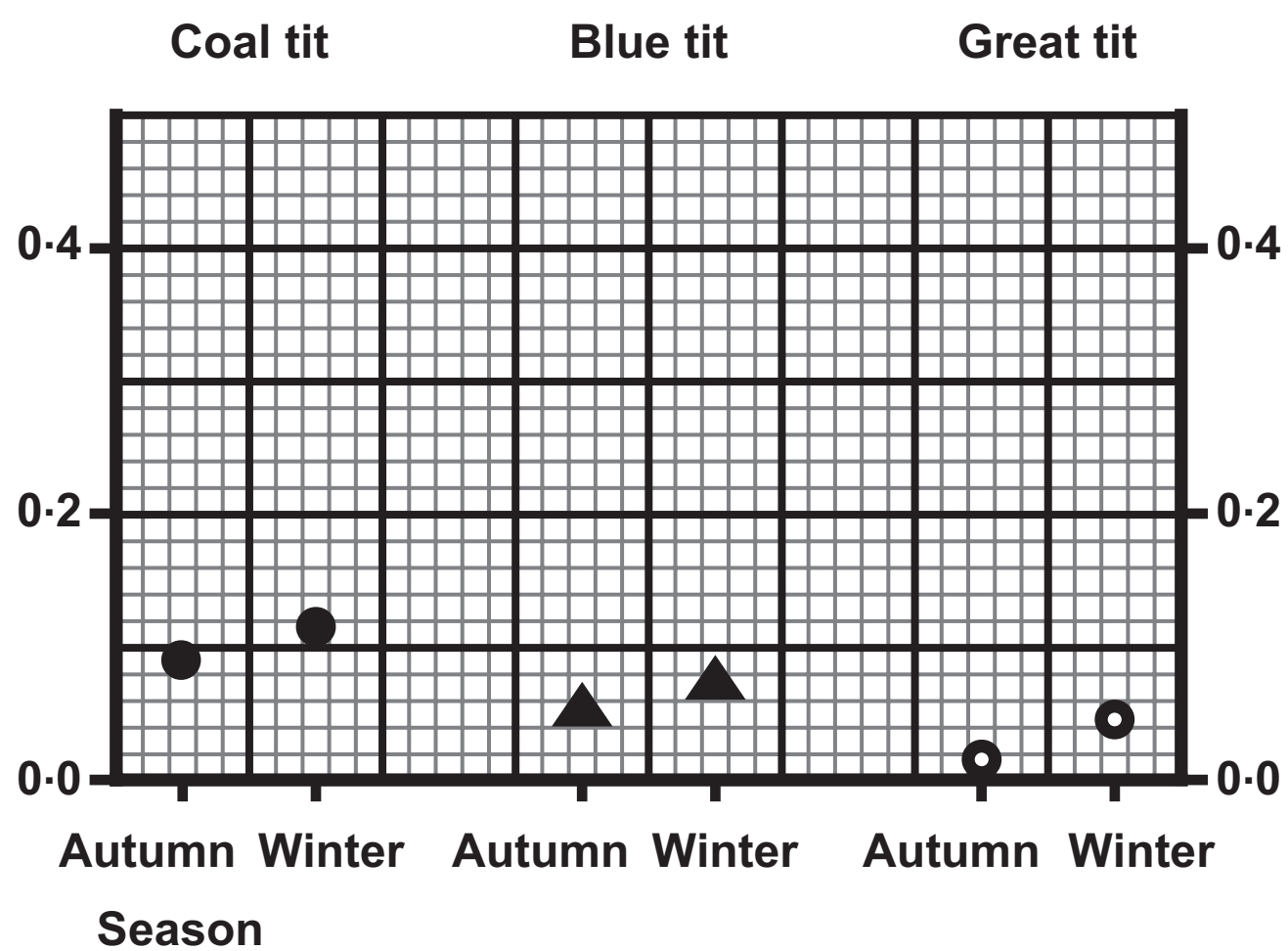


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Question 7(c)(ii) continued

GRAPH 3: LEAKED RESPIRATION

Mean rate of leaked
respiration / a.u.



Question 8(b)

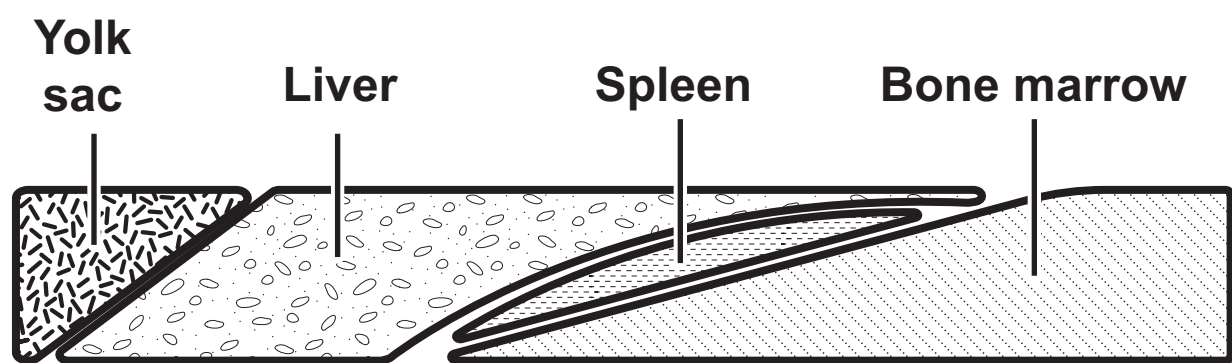
Event	Presence of protein G		Presence of protein G-P	
	Head region	Midpiece and flagellum	Head region	Midpiece and flagellum
Just before capacitation				
During capacitation				
Just before the AR				

Question 9(a)

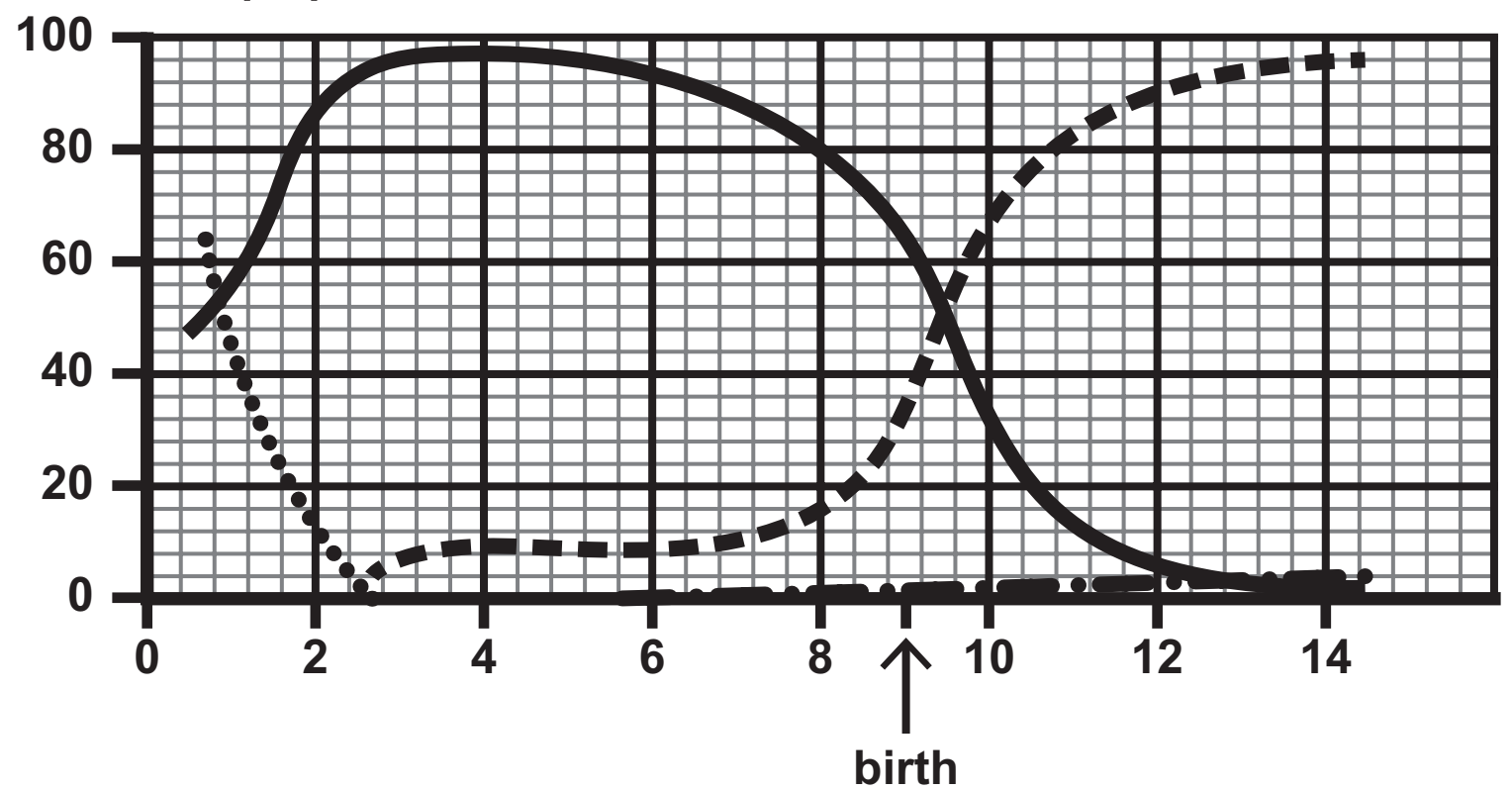
KEY

- — ● — delta
- ■ ■ ■ beta
- gamma
- ● ● ● ● ● ● ● epsilon

Structures responsible for synthesising globin subunits

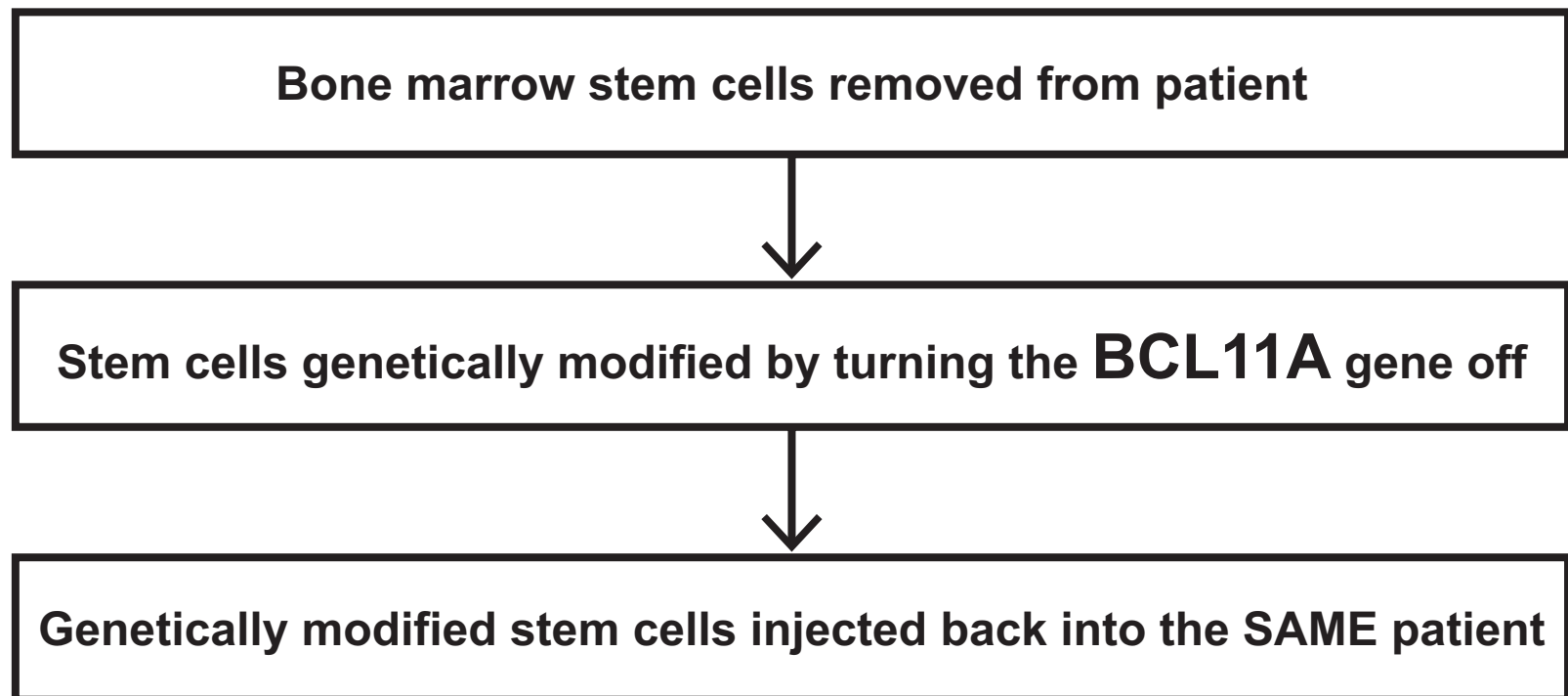


**Percentage of
globin subunits
synthesised (%)**



Time after fertilisation / months

Question 9(b)



Question 1(a)

Features of blood vessels	Type of blood vessel			
	both capillaries and veins	capillaries only	veins only	neither capillaries nor veins
Endothelial cells				
Valves				

Question 8(b)

Event	Presence of protein G		Presence of protein G-P	
	Head region	Midpiece and flagellum	Head region	Midpiece and flagellum
Just before capacitation				
During capacitation				
Just before the AR				

Source Information

Question 7

(Source adapted from: © Andrew_Howe/Getty Images)