

Paper Reference(s) 9BI0/02
Pearson Edexcel Level 3 GCE

Biology B

Advanced

PAPER 2: Advanced Physiology, Evolution and Ecology

Diagram Booklet

INSTRUCTIONS

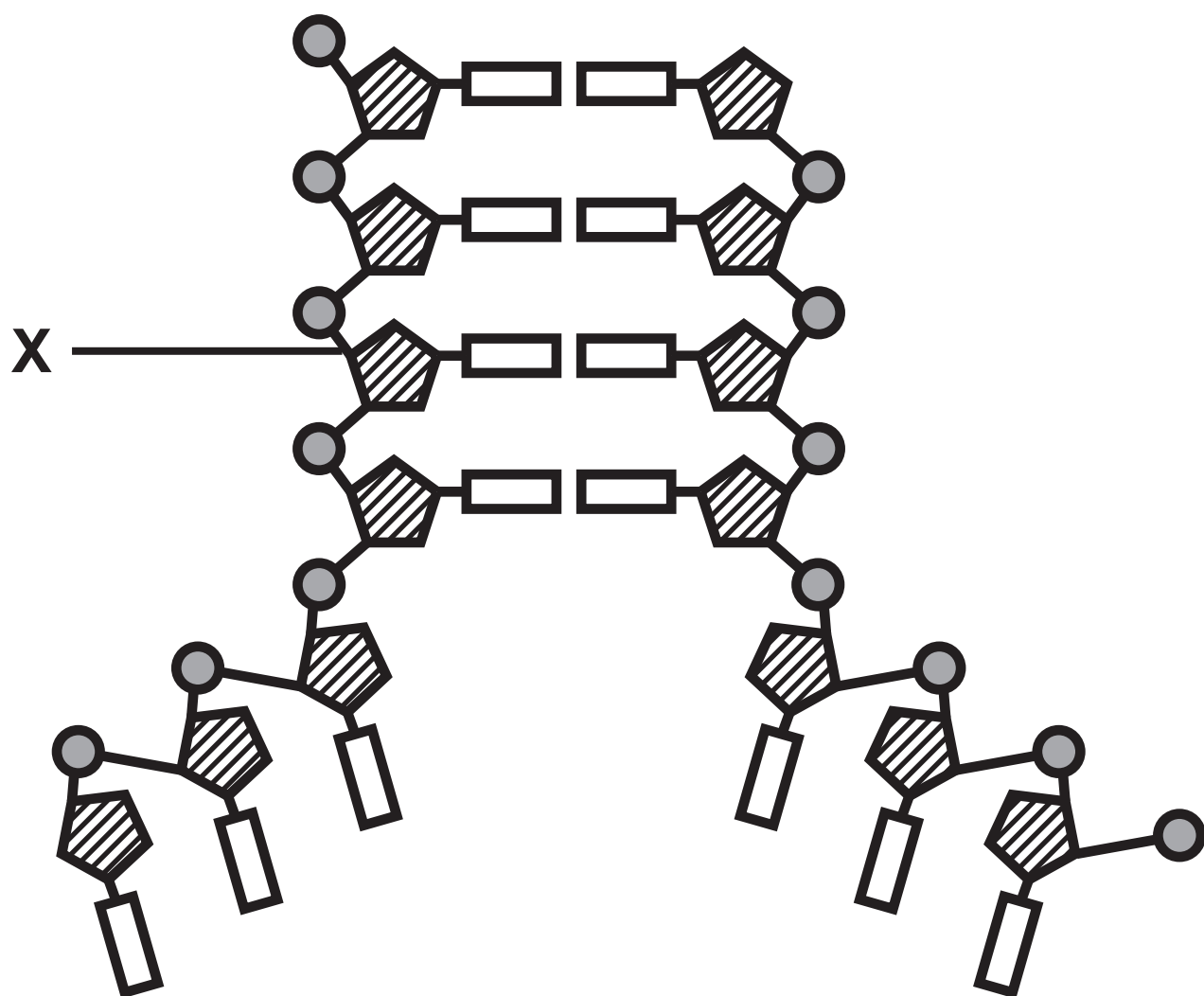
**THIS DIAGRAM BOOKLET MUST NOT BE RETURNED WITH
THE QUESTION PAPER AT THE END OF THE EXAMINATION.**

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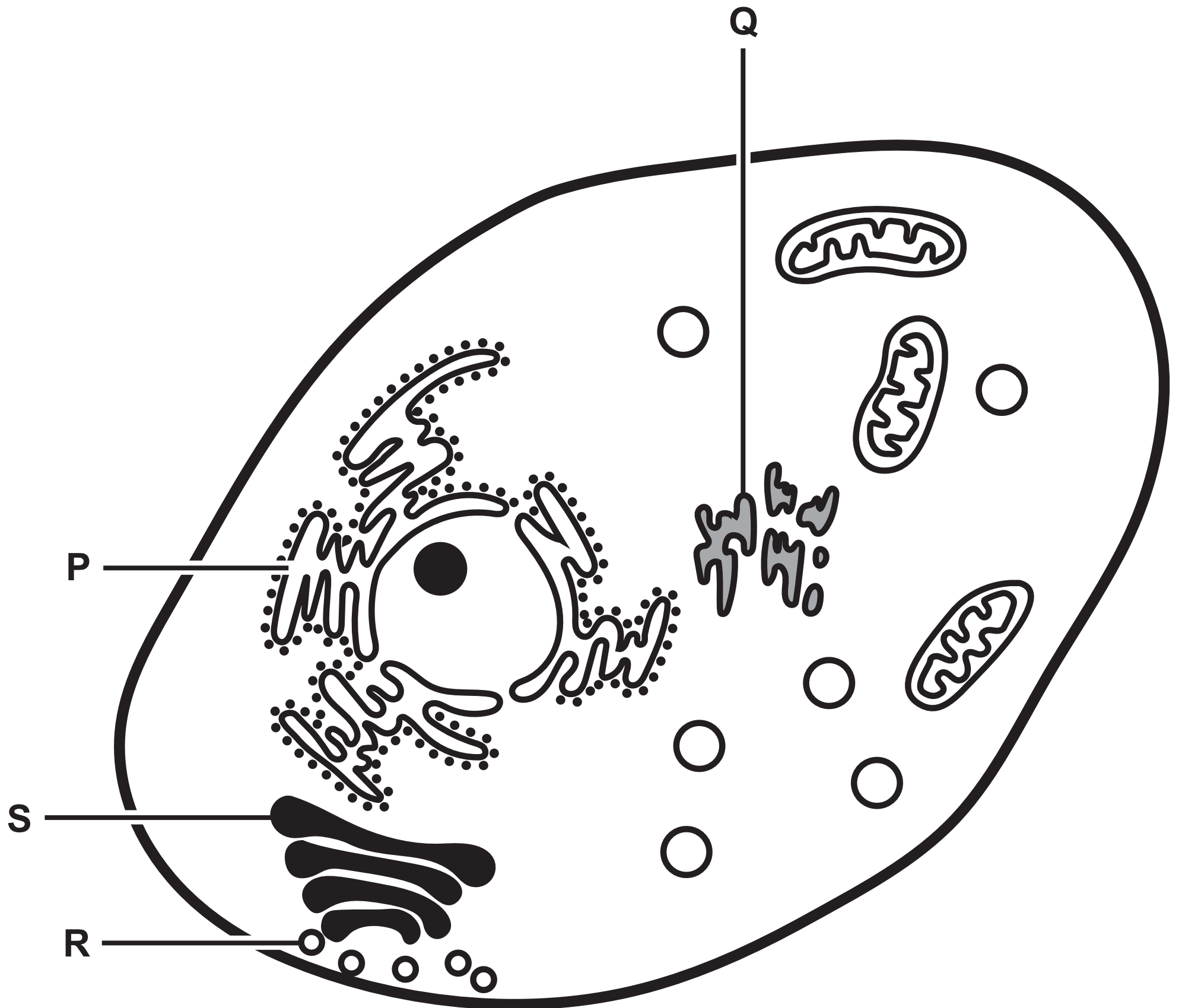
Question 1(a)



Question 2(b)

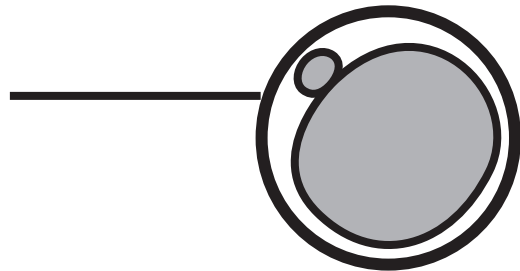
Sequence of red (R) and far-red (FR) light	Mean number of seeds that germinated	Standard deviation (SD)
R	45	± 4
R, FR	5	± 2
R, FR, R	45	± 5
R, FR, R, FR	10	± 4
R, FR, R, FR, R	40	± 9

Question 3(a)

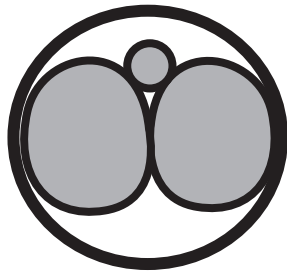


Question 3(b)

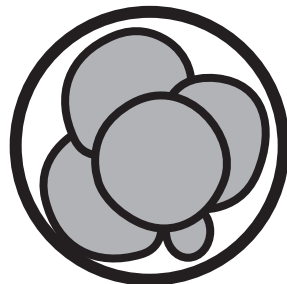
zona
pellucida



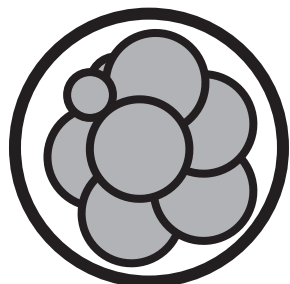
Day 0
= 1 cell



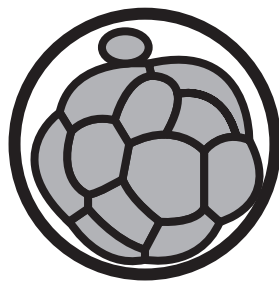
Day 1
= 2 cells



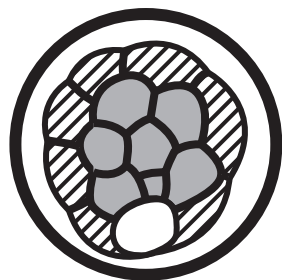
Day 2
= 4 cells



Day 3
= 8 cells

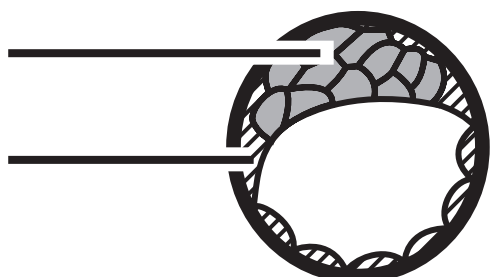


Day 4
= 16 cells



Day 5
= 32 cells

inner cell mass
trophectoderm



Day 6
= 64–100 cells

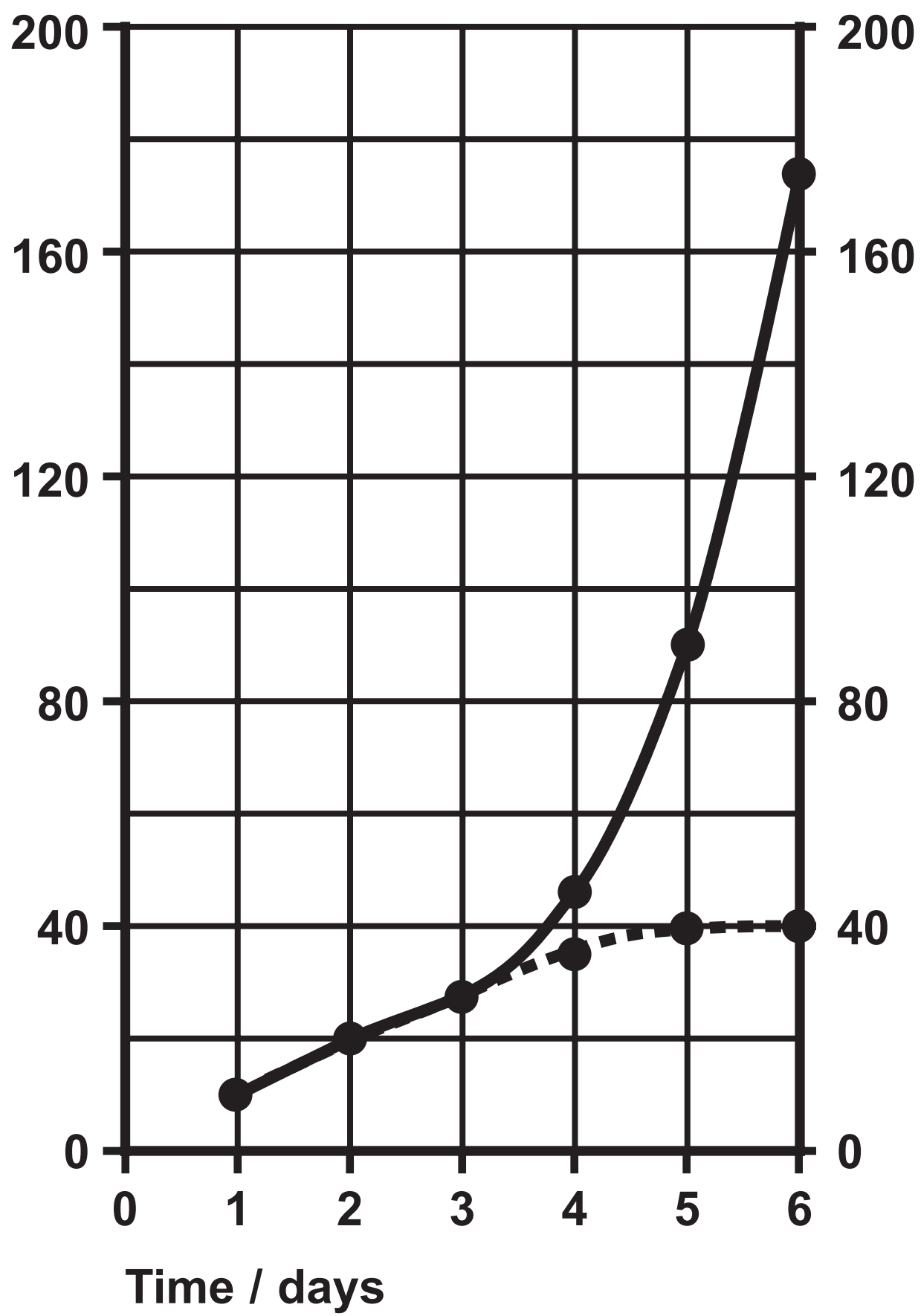
Question 3(b)

KEY

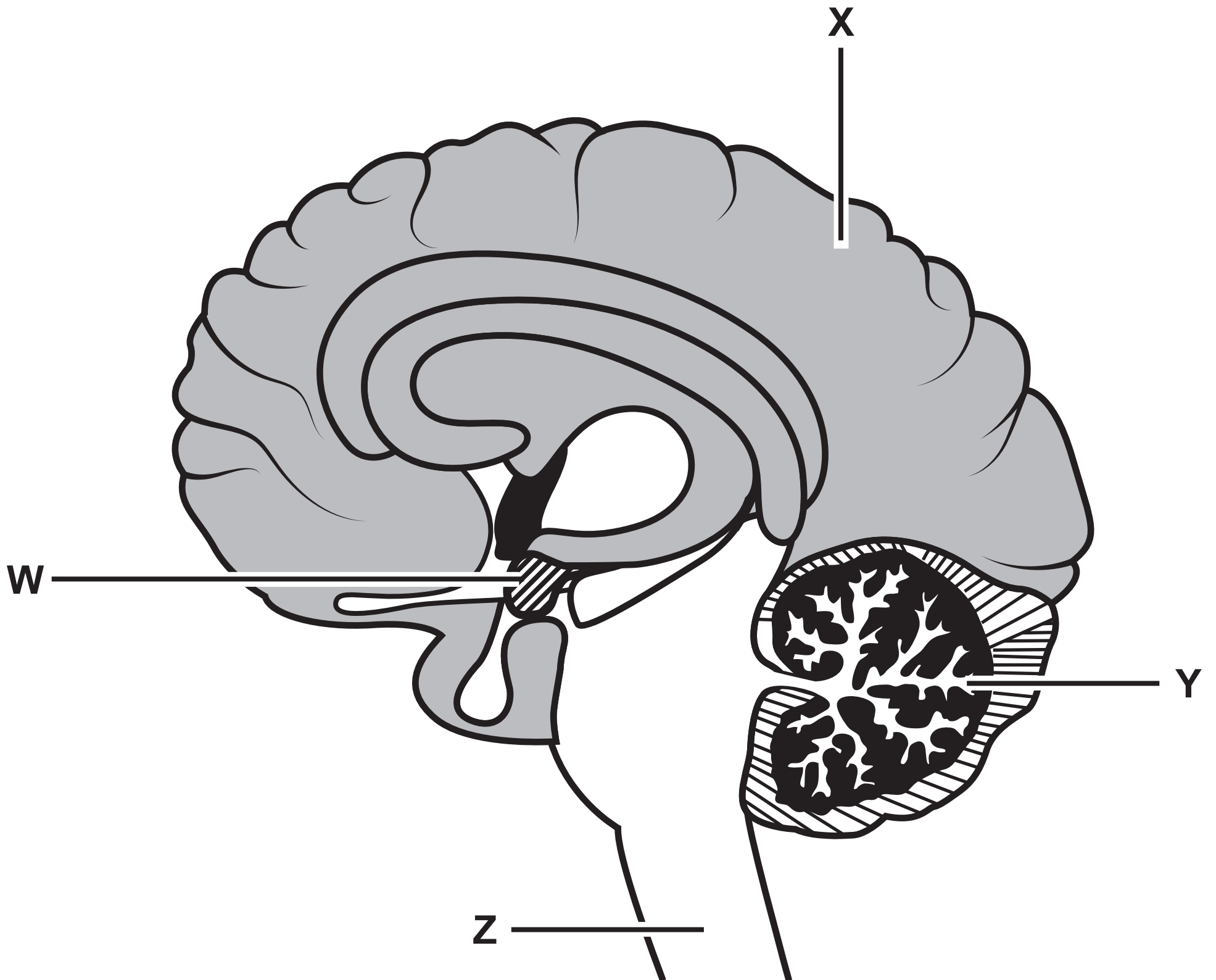
—●— cell of inner cell mass

- - ● - - trophectoderm

Ratio



Question 4(a)(i)



Question 4(b)

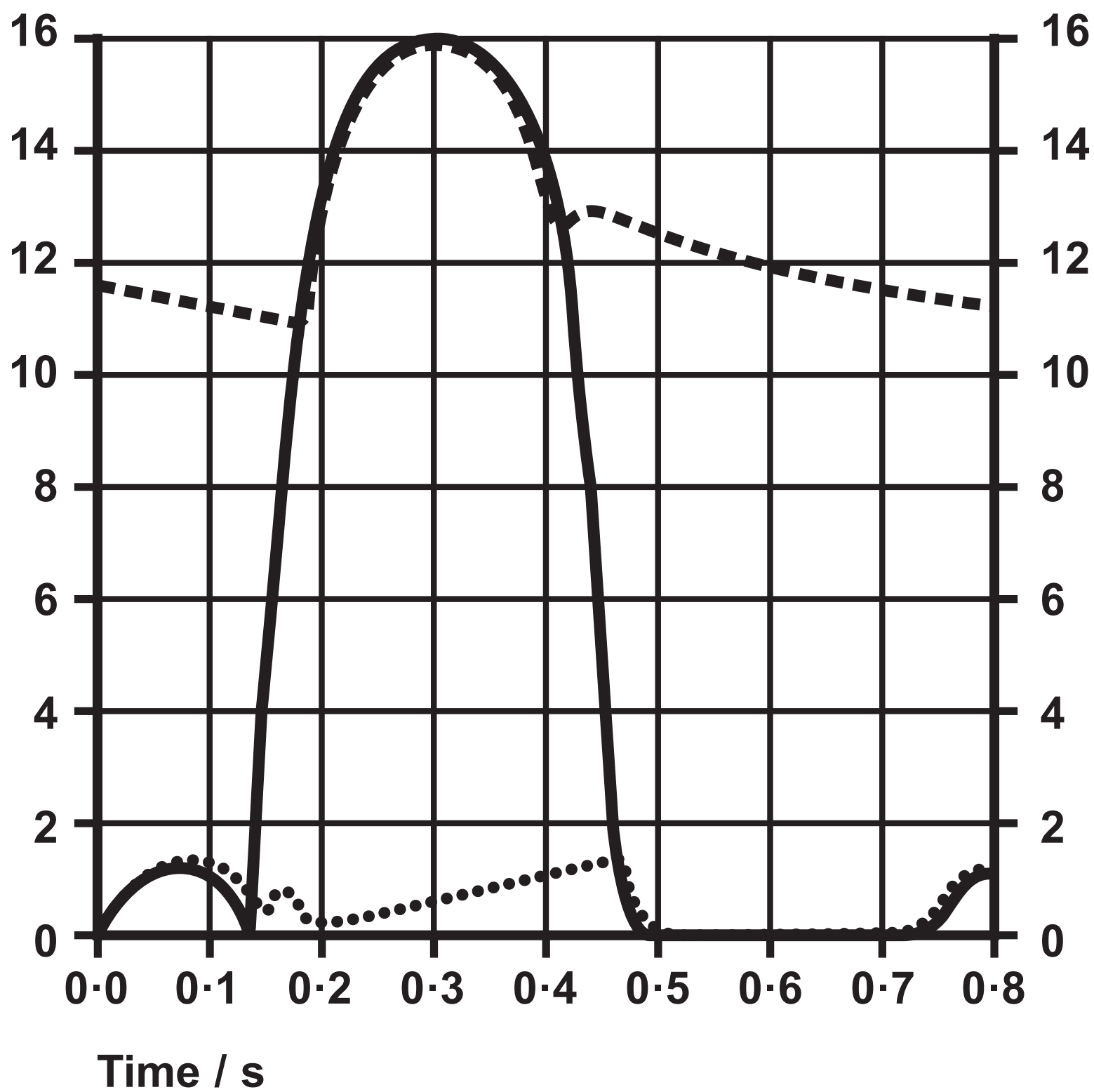
KEY

— left ventricle

- - - aorta

..... left atrium

Healthy heart

Pressure
/ kPa

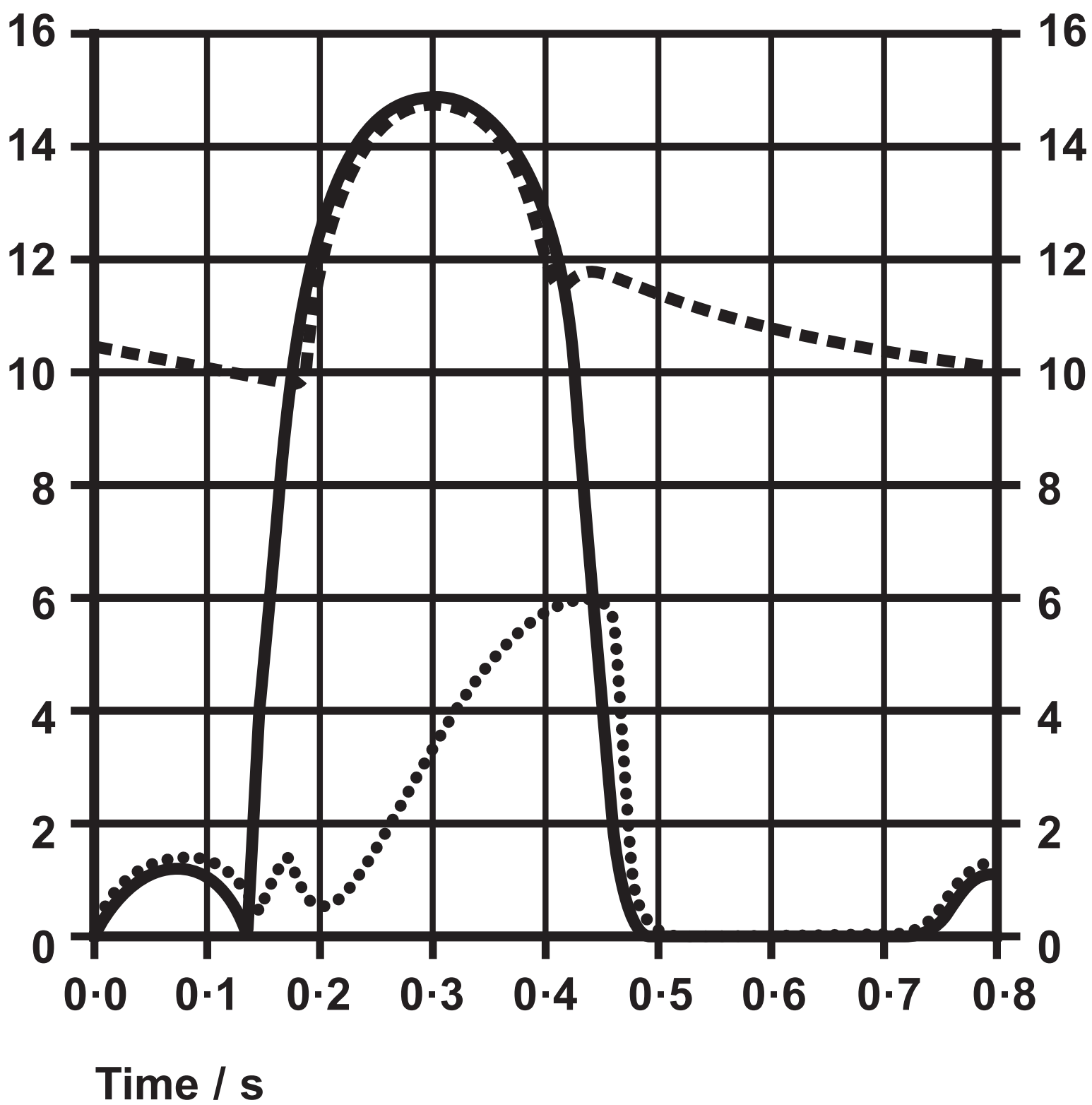
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Turn over

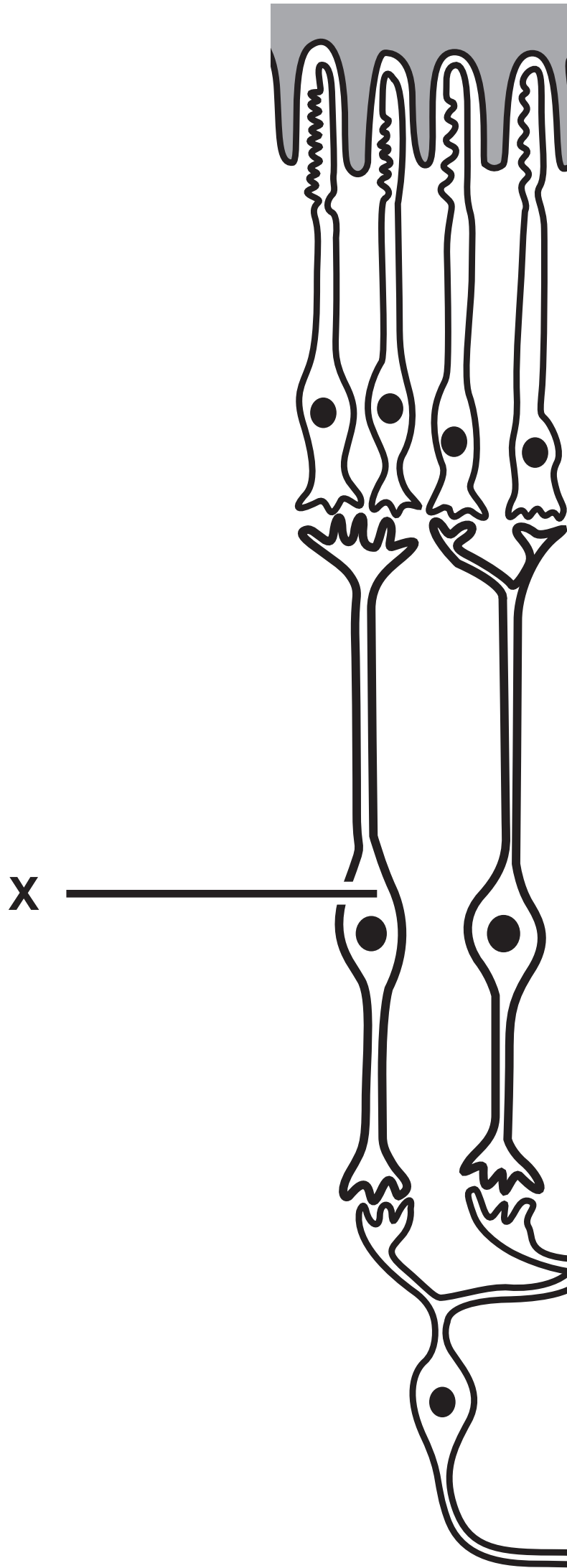
Question 4(b) continued.

Heart with an atrioventricular valve that leaks

Pressure
/ kPa

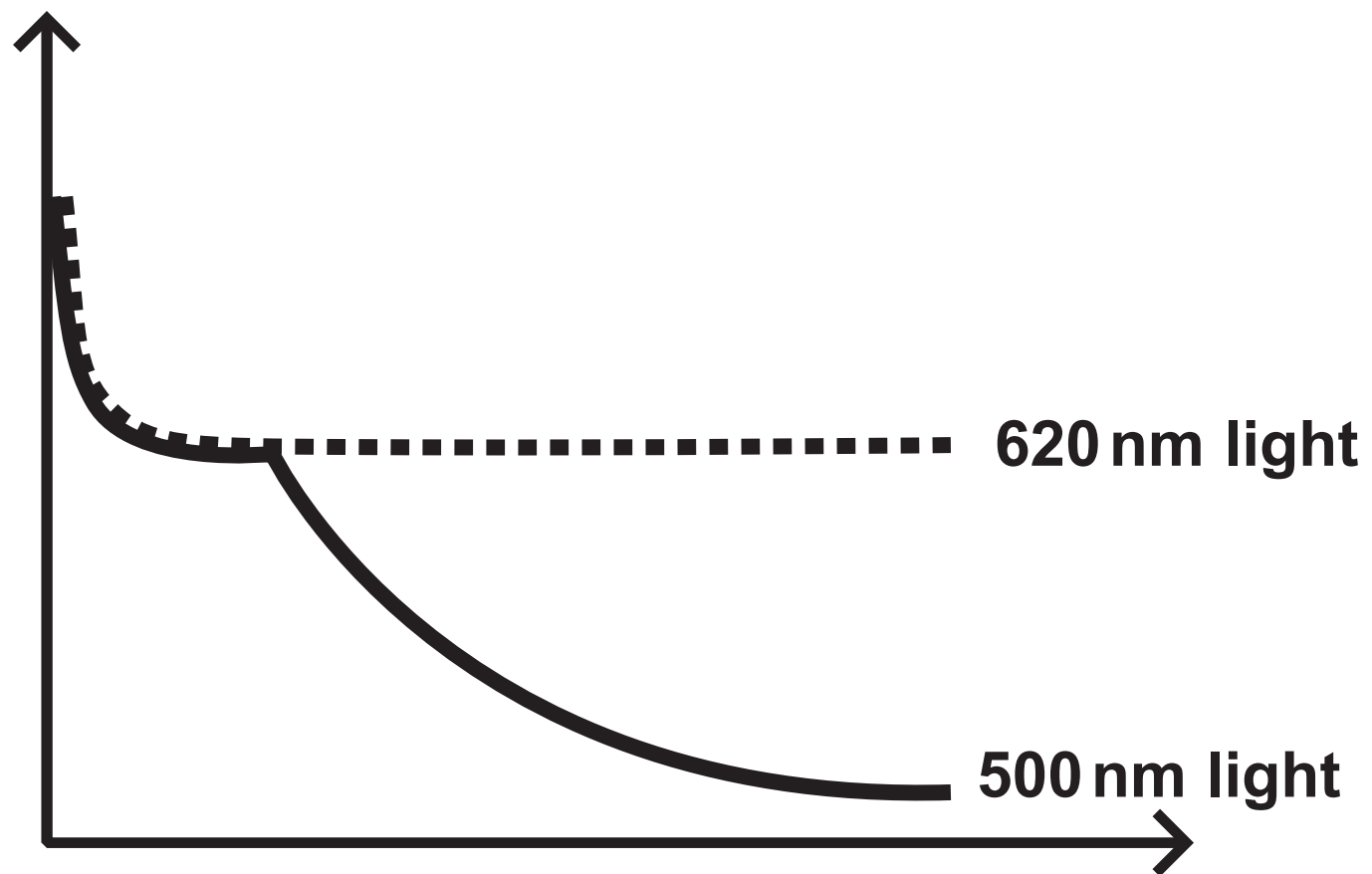


Question 5(a)



Question 5(c)

Minimum light
intensity at which
LED was seen



Time spent in darkness

500 nm light

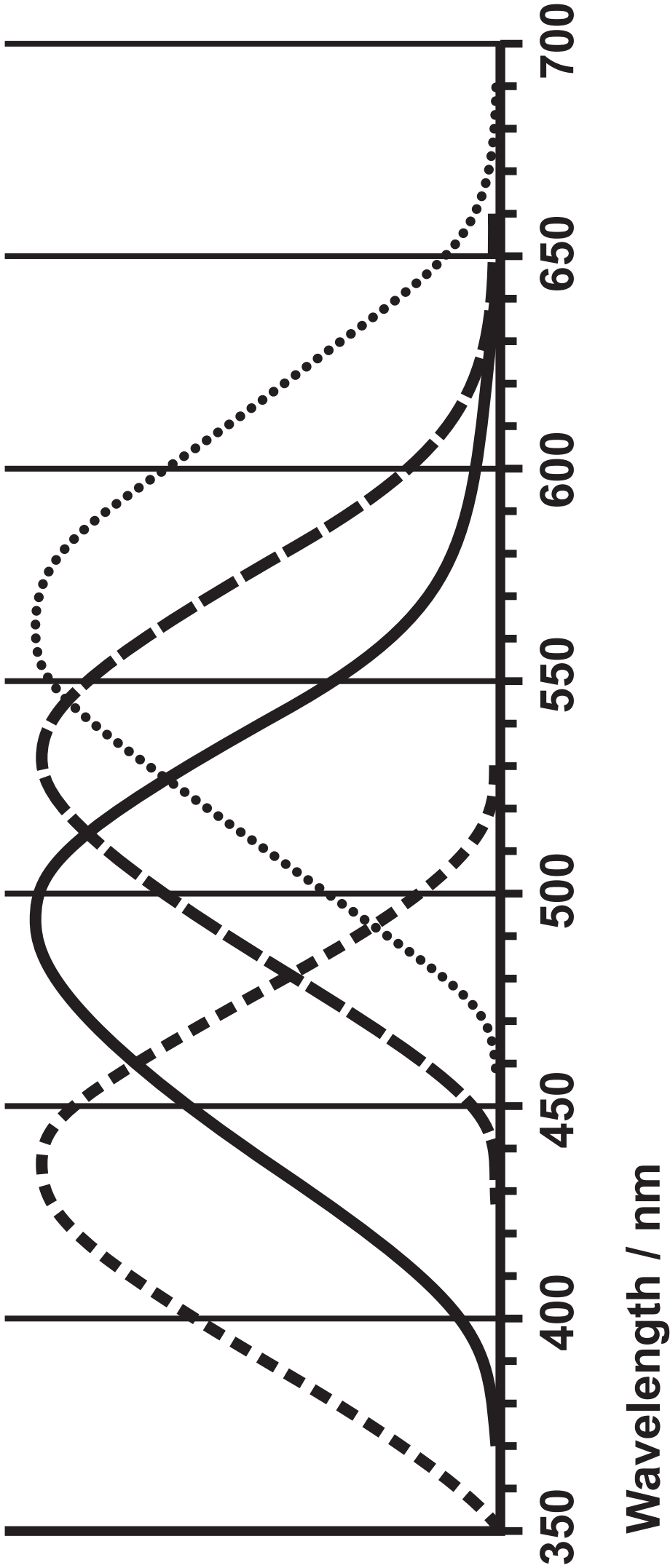
620 nm light

Question 5(c)

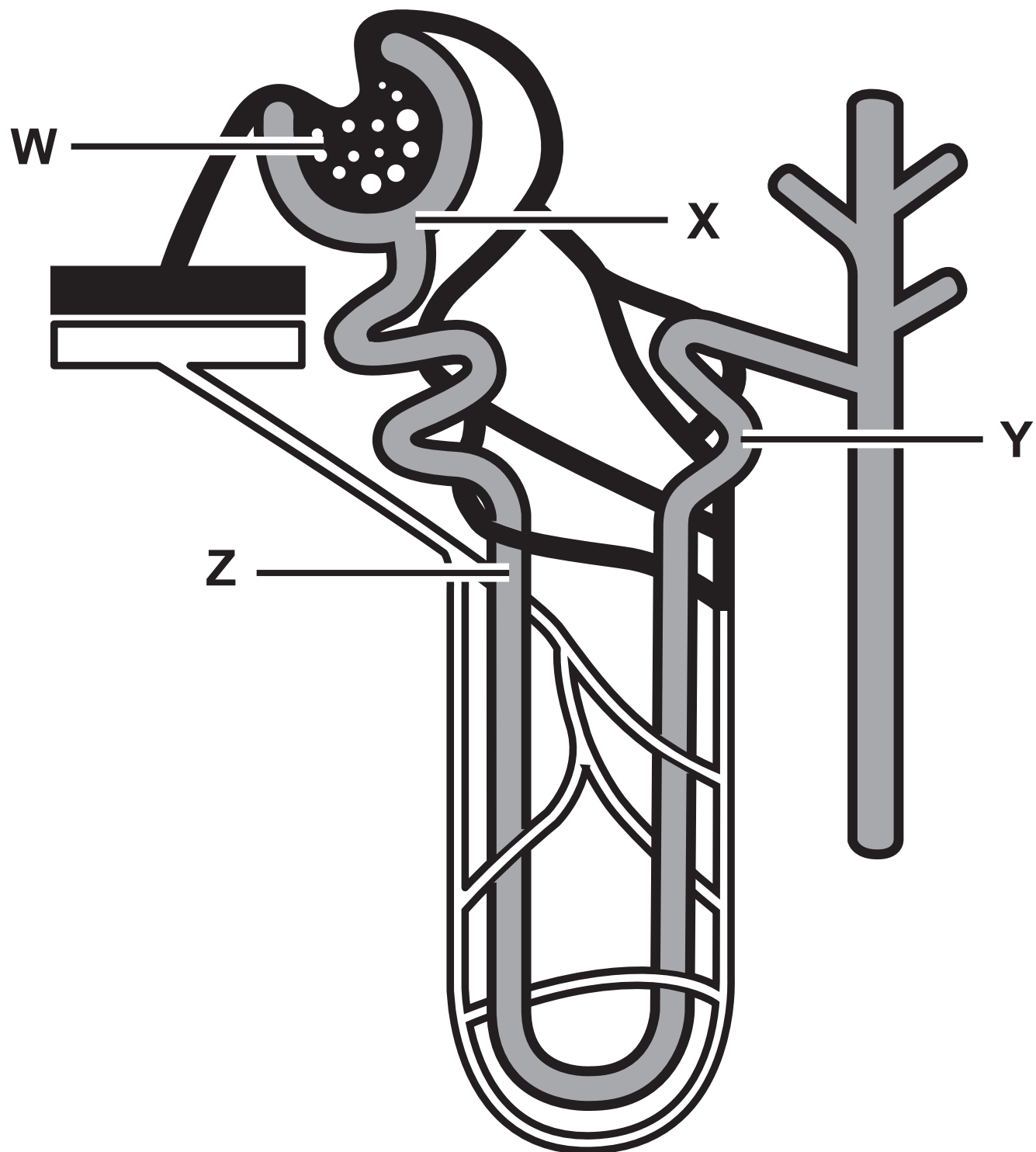
KEY

- Blue cones
- Rods
- Green cones
- Red cones

Relative sensitivity
/ a.u.

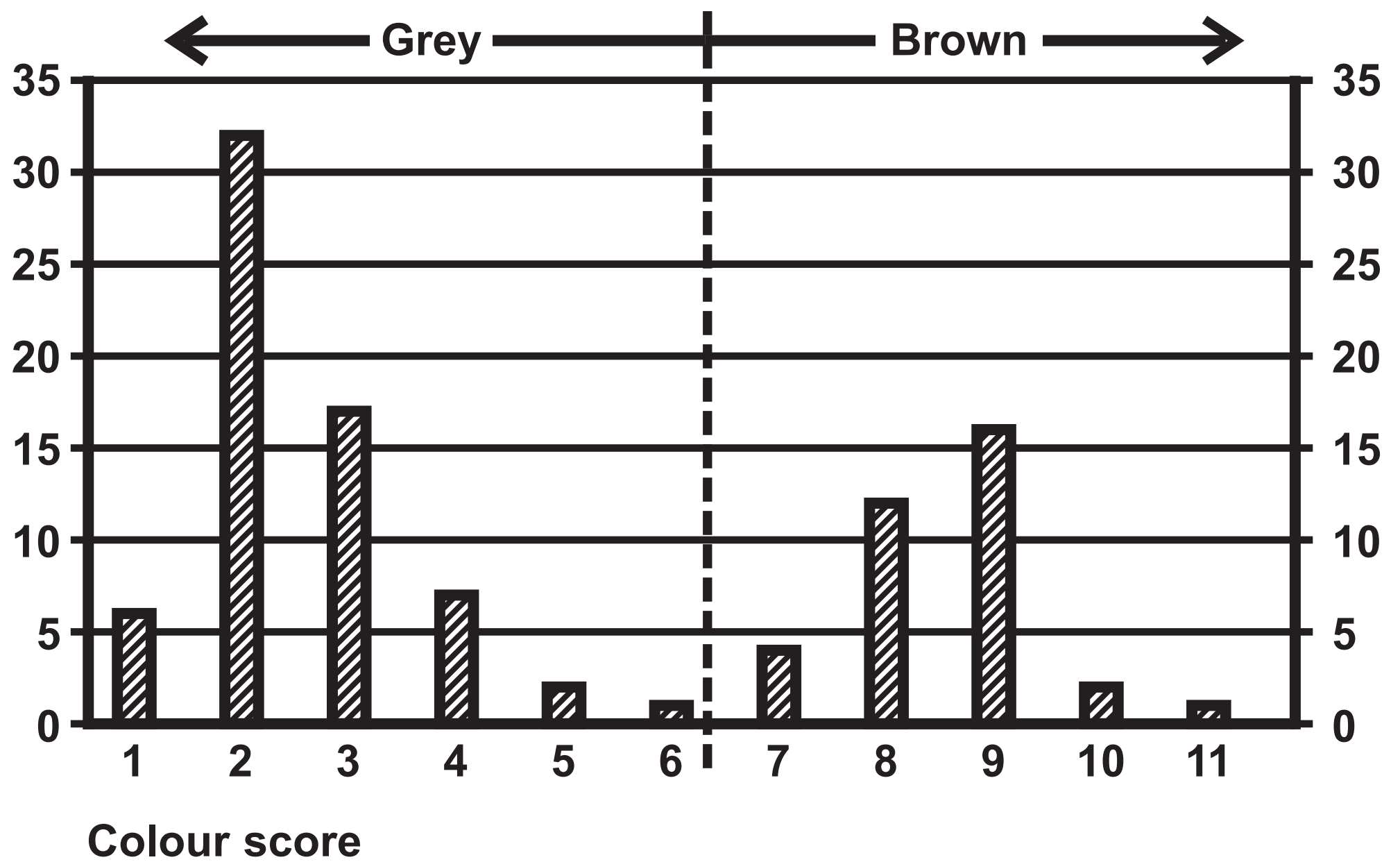


Question 6(a)



Question 7

Percentage of owls with
colour score (%)

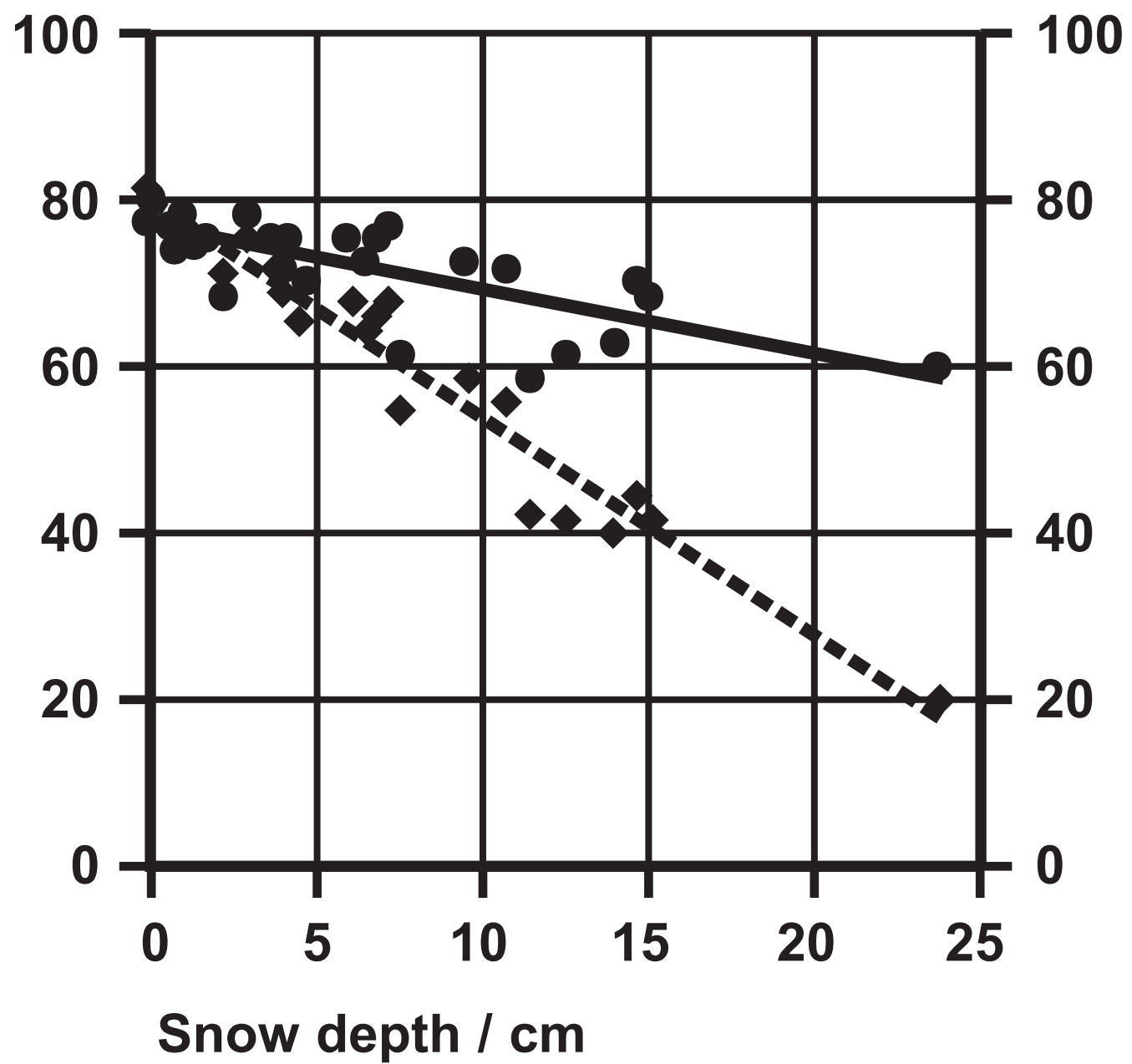


Question 7(b)

KEY

— ● grey owls

- - - ◆ brown owls

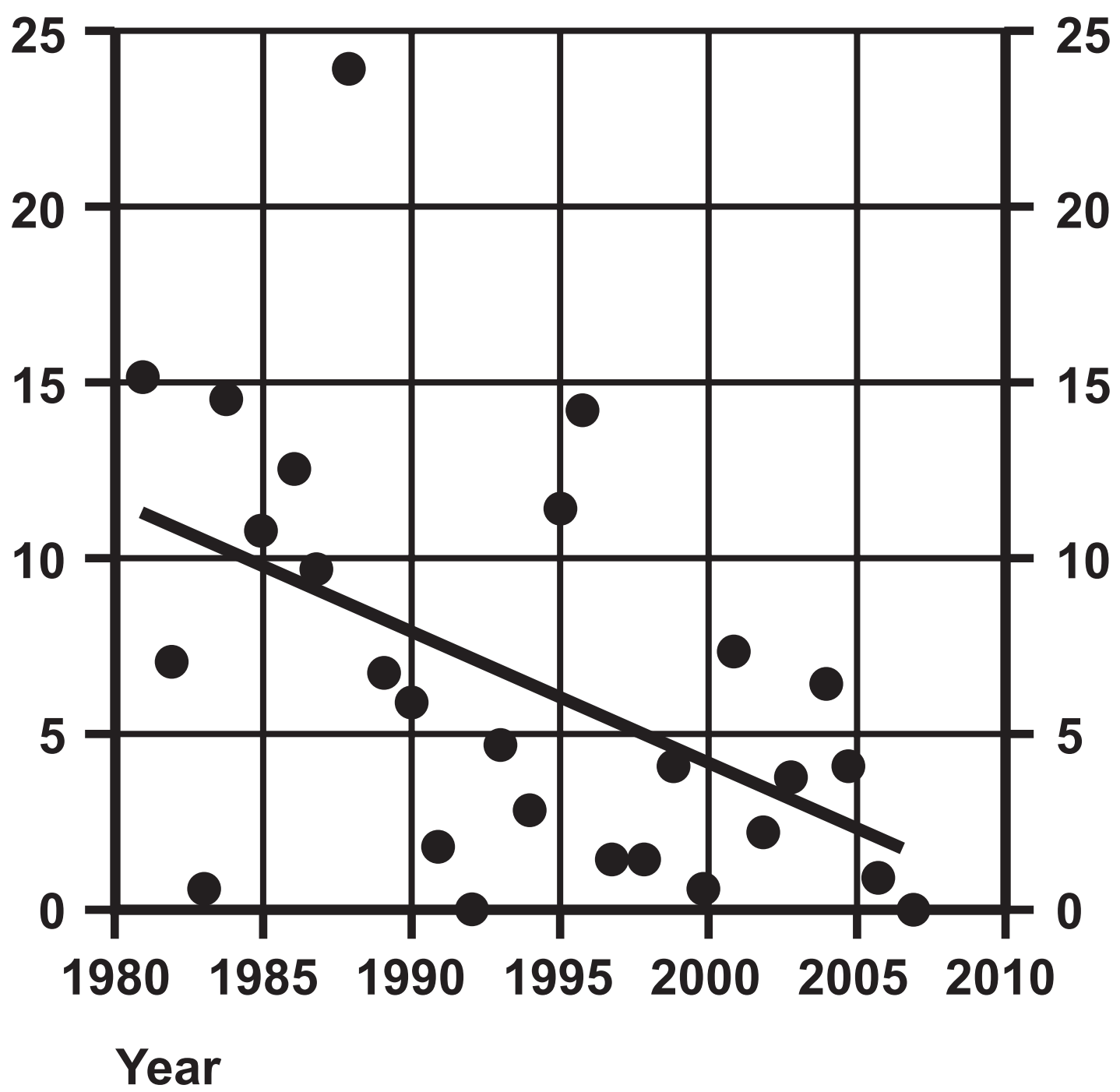
Percentage of owls that
survive (%)

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Turn over

Question 7(b) continued.

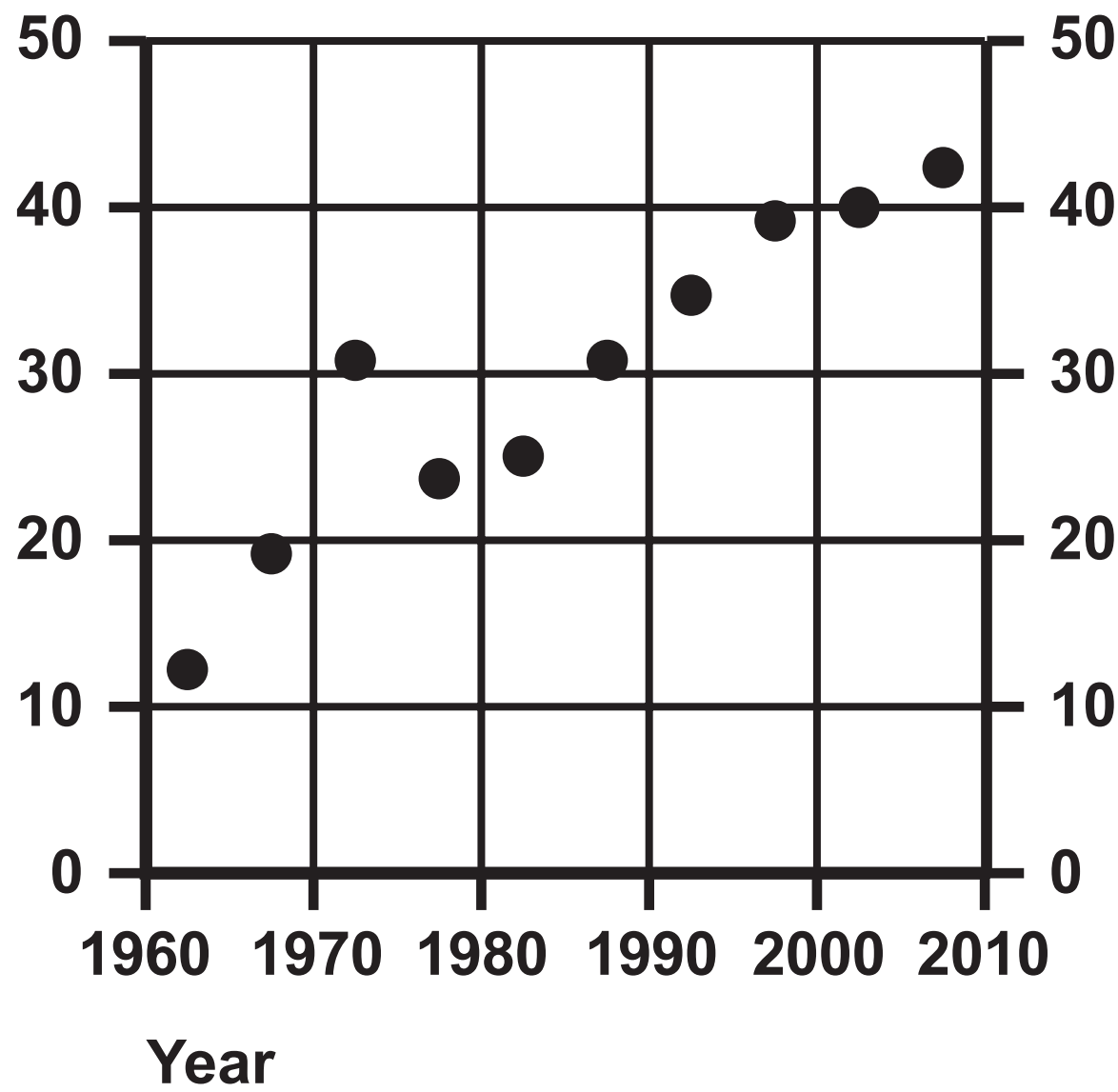
Mean snow
depth / cm



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Question 7(b) continued.

Percentage of owls that
are brown (%)



Question 8

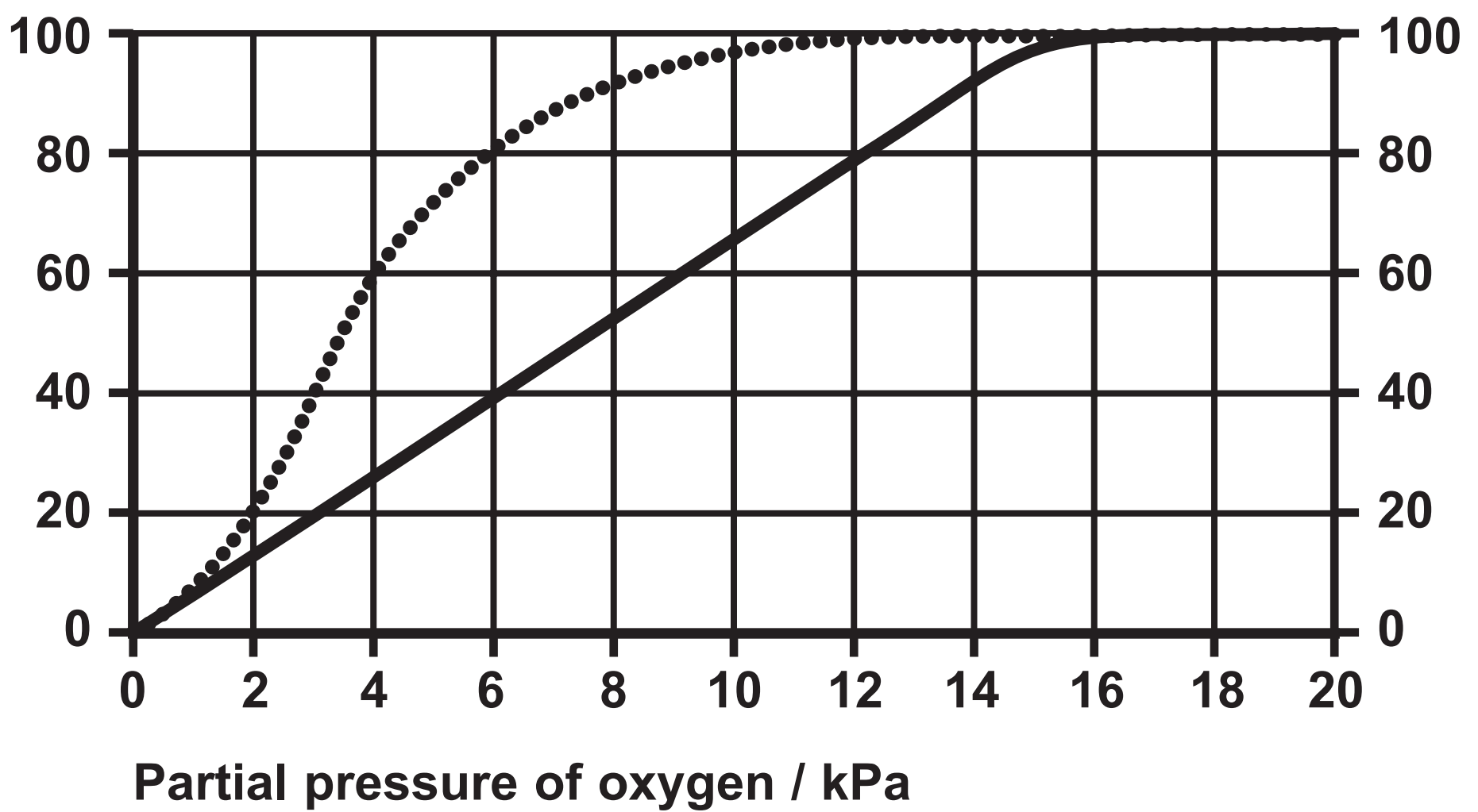
Length of time since glacier melted / years	Soil depth / cm	Mass of nitrate in soil / mg m^{-2}	Mass of leaf litter that falls to ground each year / $\text{g m}^{-2} \text{yr}^{-1}$
5	5·2	3·8	1·5
15	6·4	4·1	1·7
40	7·0	5·3	12·8
100	9·2	21·8	277·0
150	10·8	35·4	335·0
200	15·1	53·3	277·0
250	16·2	61·4	261·0

Question 8(c)

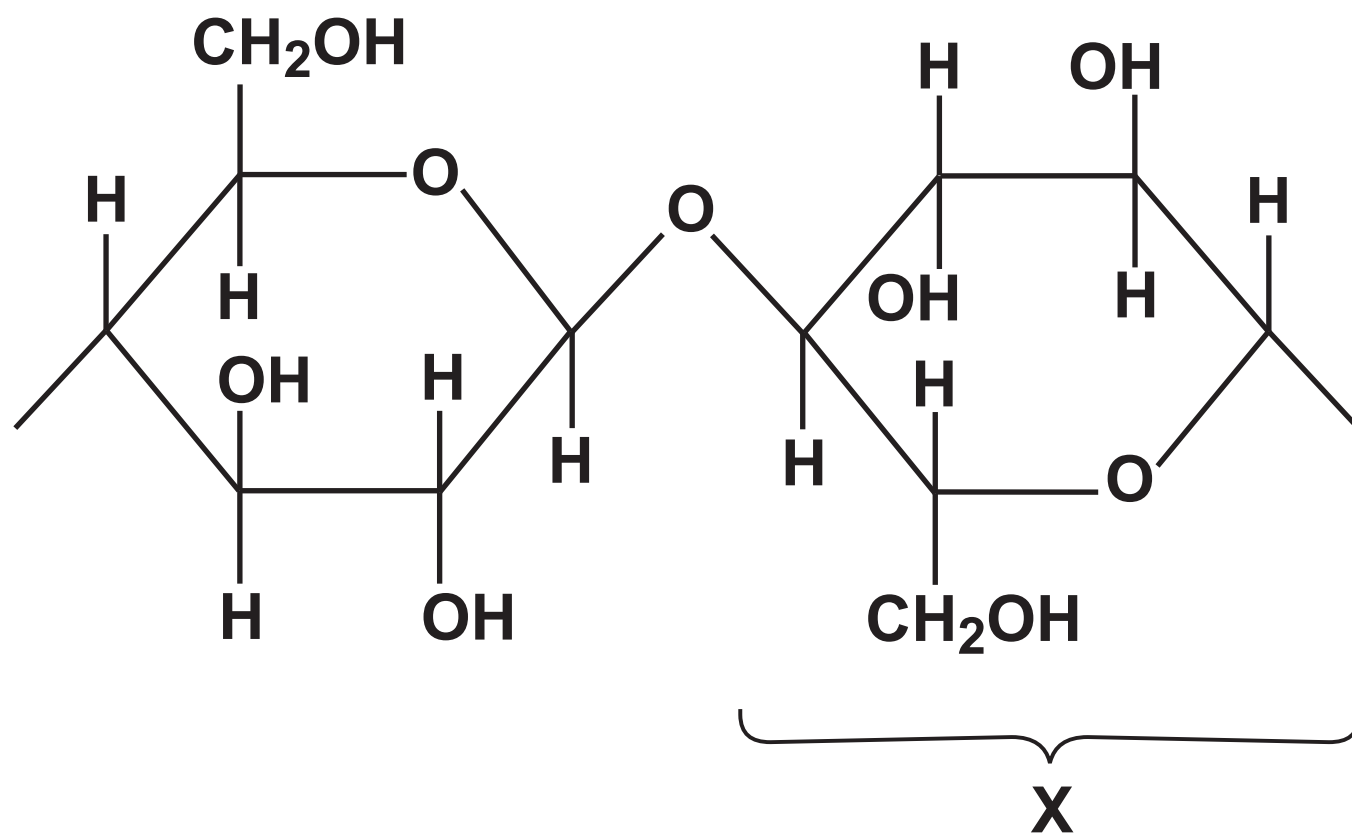
KEY

..... haemoglobin

—— leghaemoglobin

Oxygen saturation
(%)

Question 9(a)



Question 9(b)

Area	Index of diversity	
	At start of project	After two years
Conservation area with paper project	2·8	3·6
Conservation area where local people are banned from entering	2·4	2·2