

Paper Reference(s) 4BI1 / 1BR 4SD0 / 1BR
Pearson Edexcel International GCSE (9–1)

Biology
Unit: 4BI1
Science (Double Award) 4SD0
Paper: 1BR

Tuesday 16 May 2023 – Morning

Diagram Booklet

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.

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

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Turn over

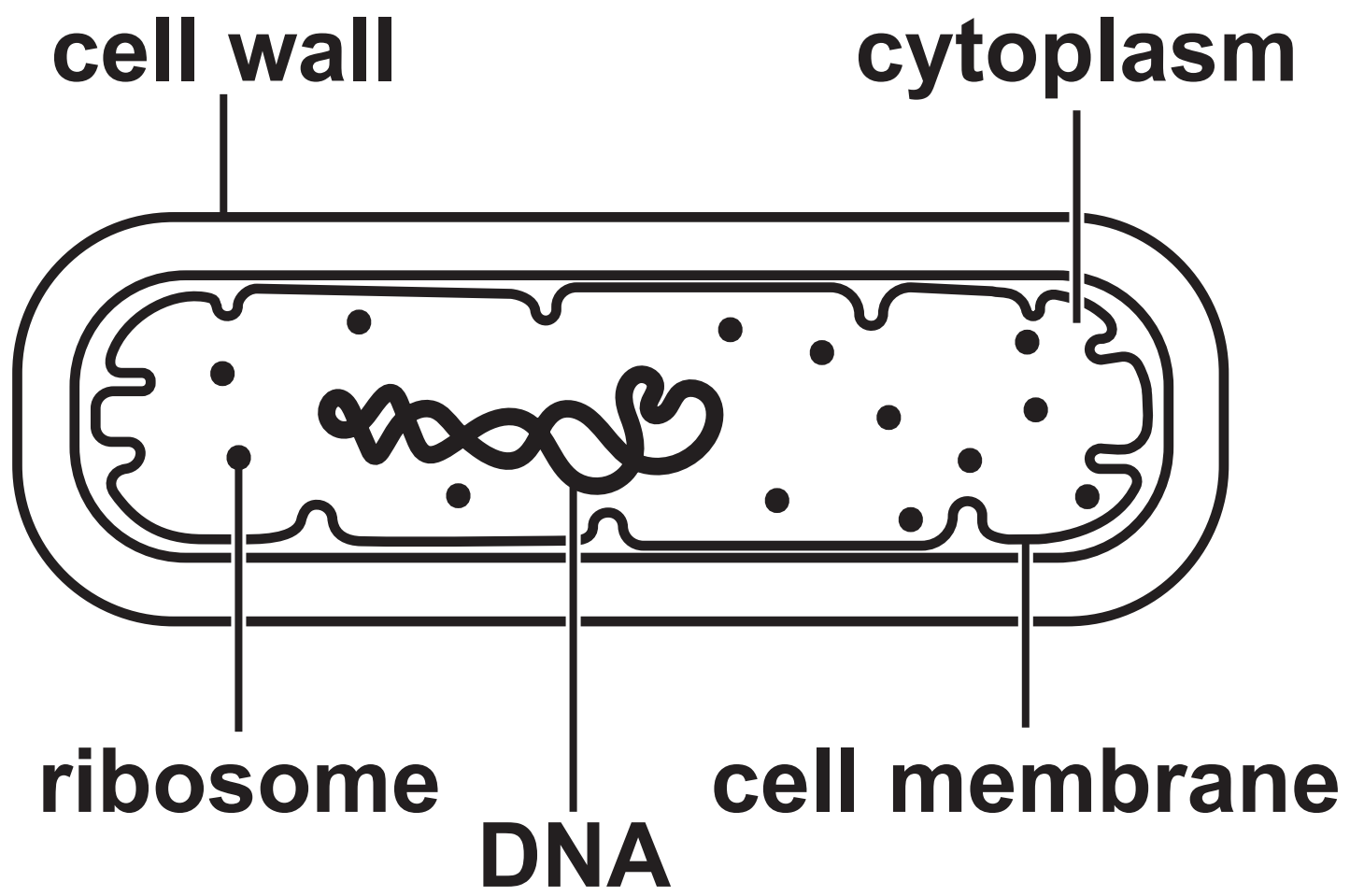
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Question 1(a)(i)



Question 1(a)(ii)

☐ A

☐ B

☐ C

☐ D

| Cytoplasm | Cell surface membrane | Cell wall |
|-----------|-----------------------|-----------|
| YES | YES | YES |
| YES | YES | NO |
| NO | YES | NO |
| NO | YES | YES |

Question 2(a)

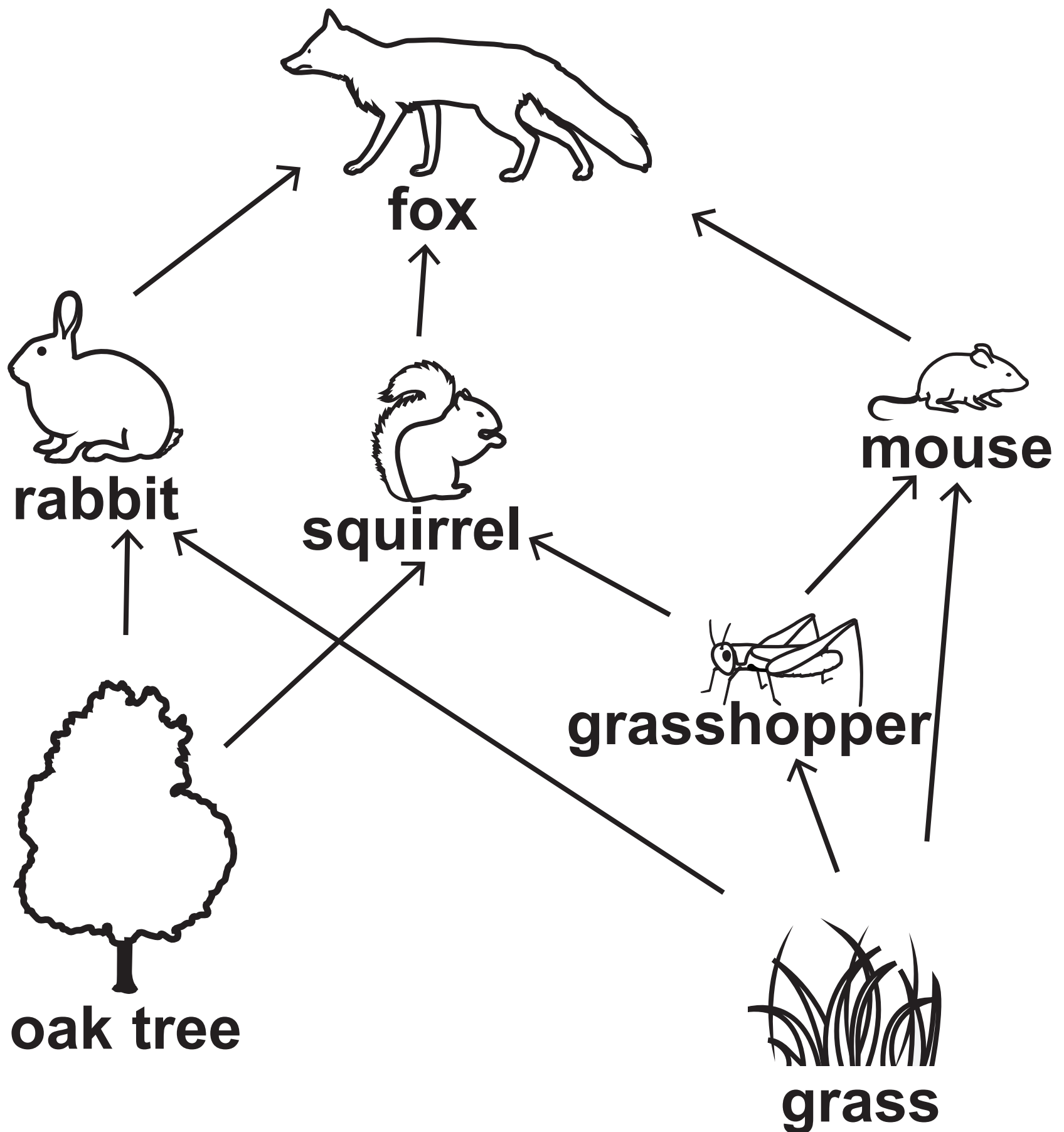
The black and white photograph shows a small handful of round, flat seeds.

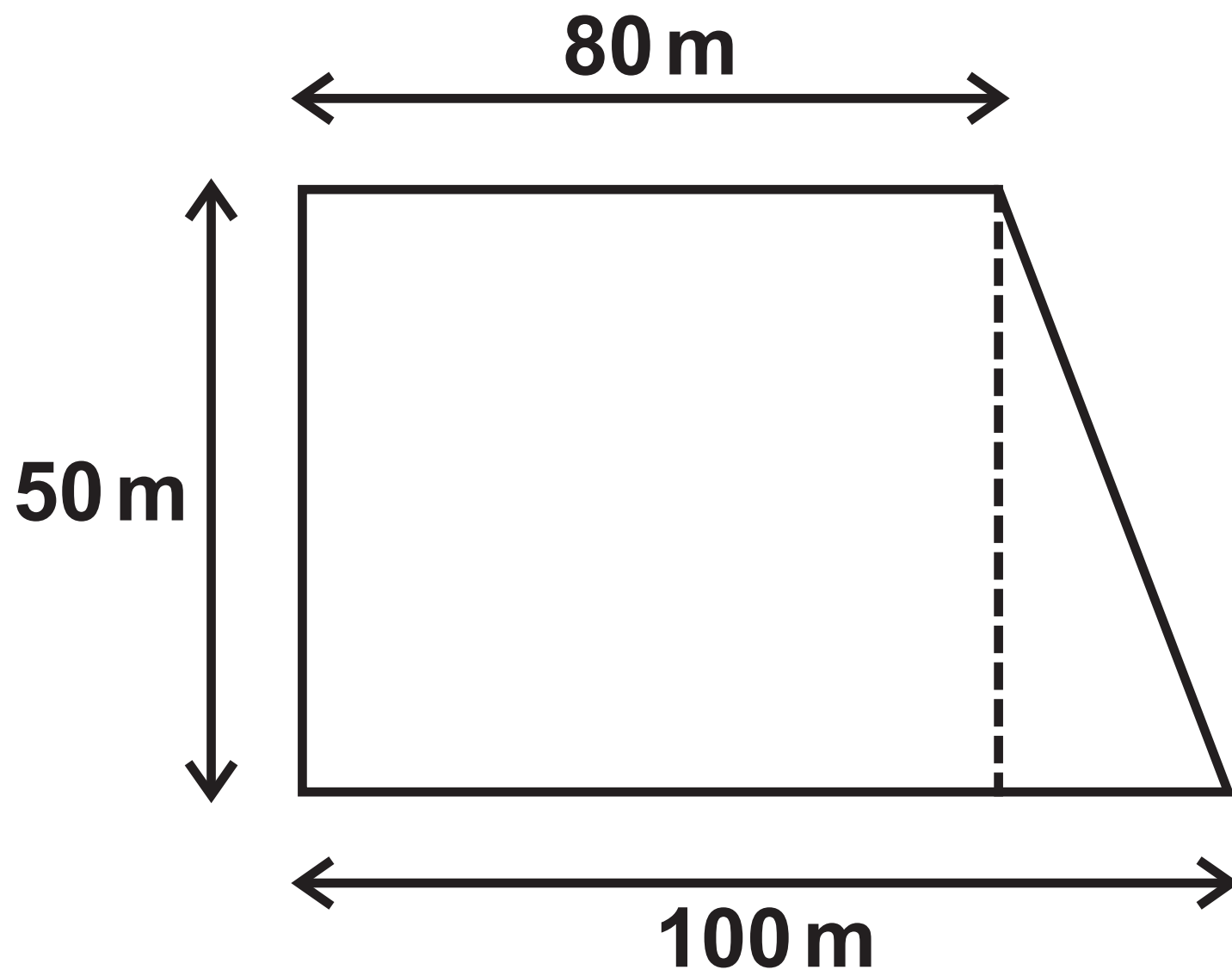


Question 2(b)

| Nutrient | Percentage of RDA (%) provided by 50 g of lentils |
|--------------|--|
| fat | 1 |
| carbohydrate | 11 |
| protein | 22 |
| vitamin C | 2 |
| calcium | 4 |

Question 3(a)



Question 3(b)(iii)

Question 4(a)(ii)

☐ A

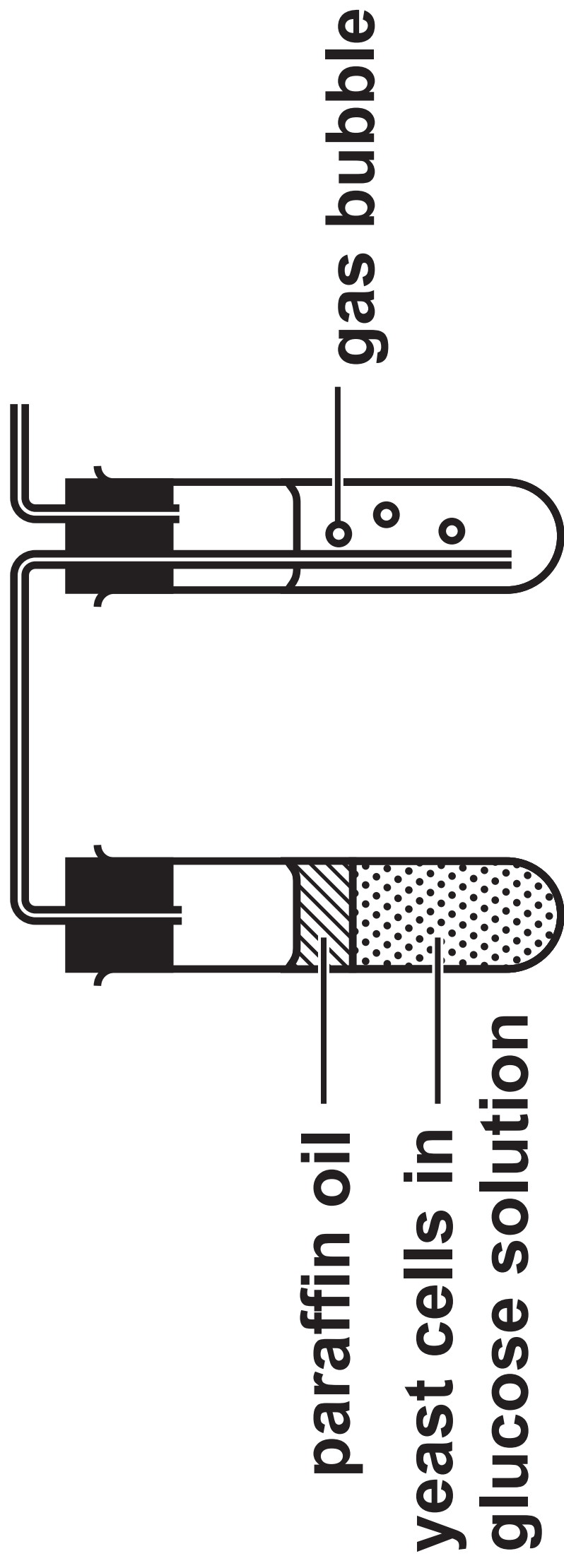
☐ B

☐ C

☐ D

| Ethanol | Carbon dioxide | Lactic acid |
|---------|----------------|-------------|
| YES | YES | NO |
| YES | NO | NO |
| NO | YES | YES |
| NO | NO | YES |

Question 4(b)



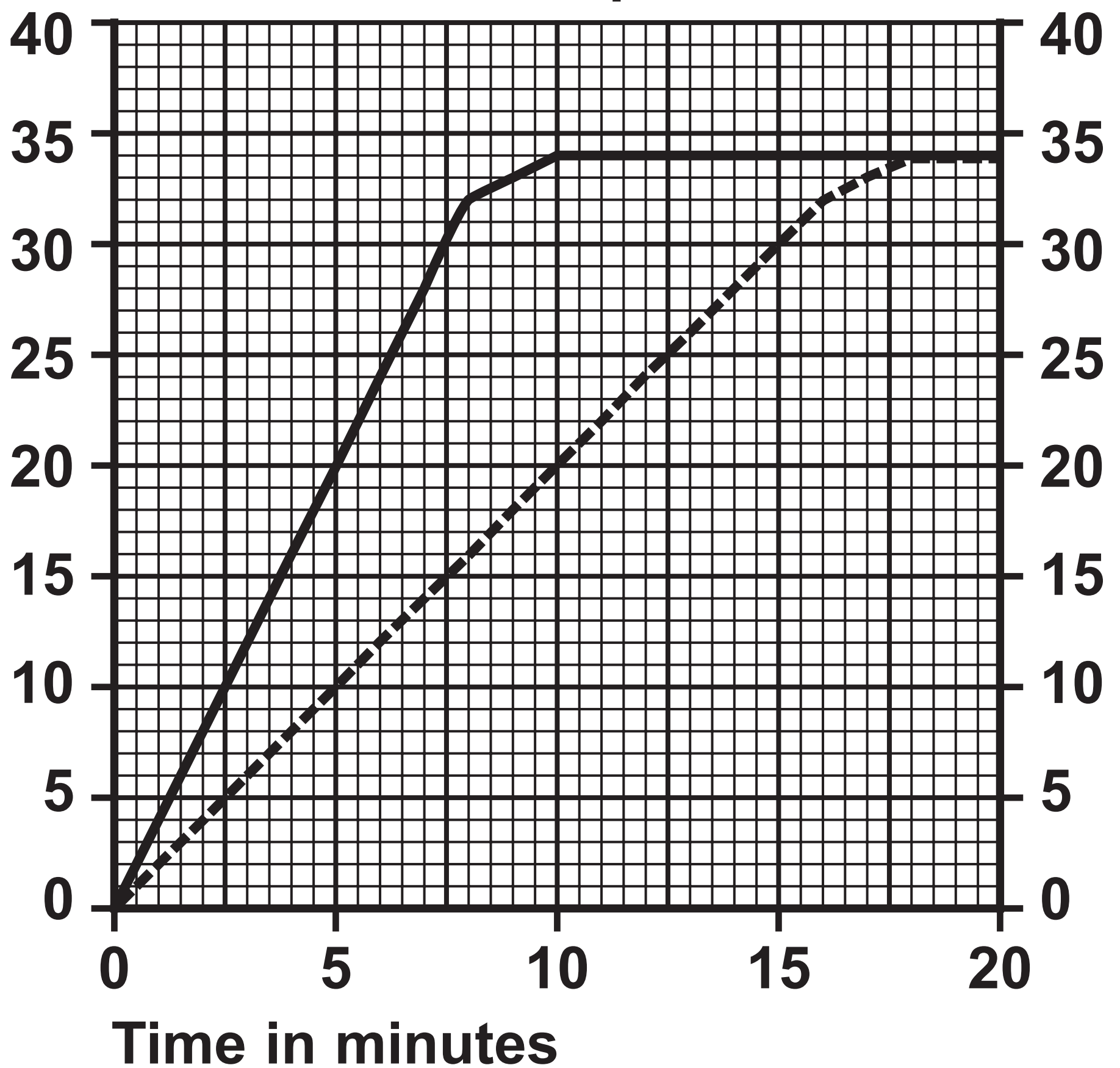
Question 4(b) – graph

KEY:

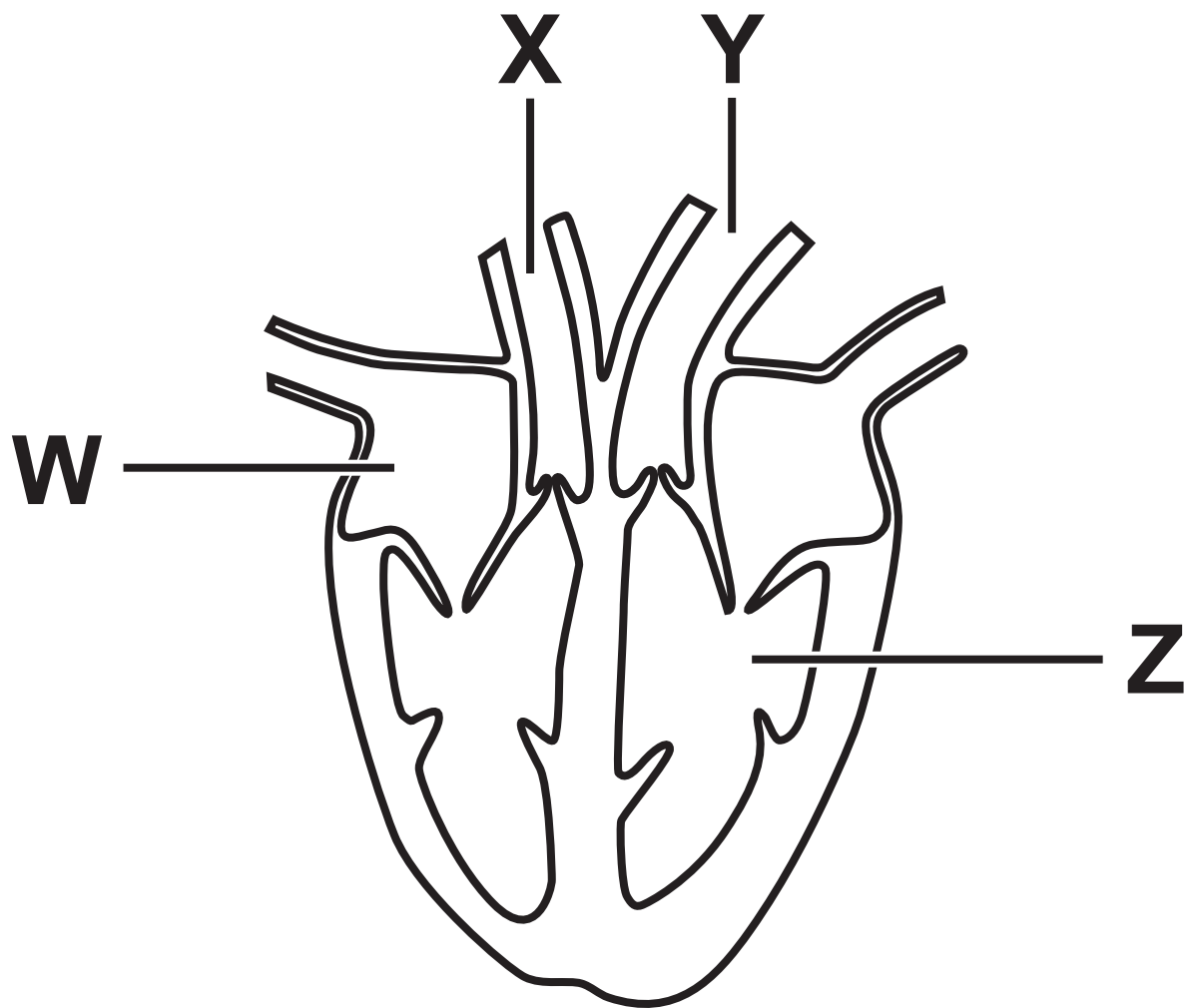
— 37 °C

--- 25 °C

Total number of bubbles produced



Question 5(a)



☐ A

left atrium

right ventricle

☐ B

left ventricle

right atrium

☐ C

right atrium

left ventricle

☐ D

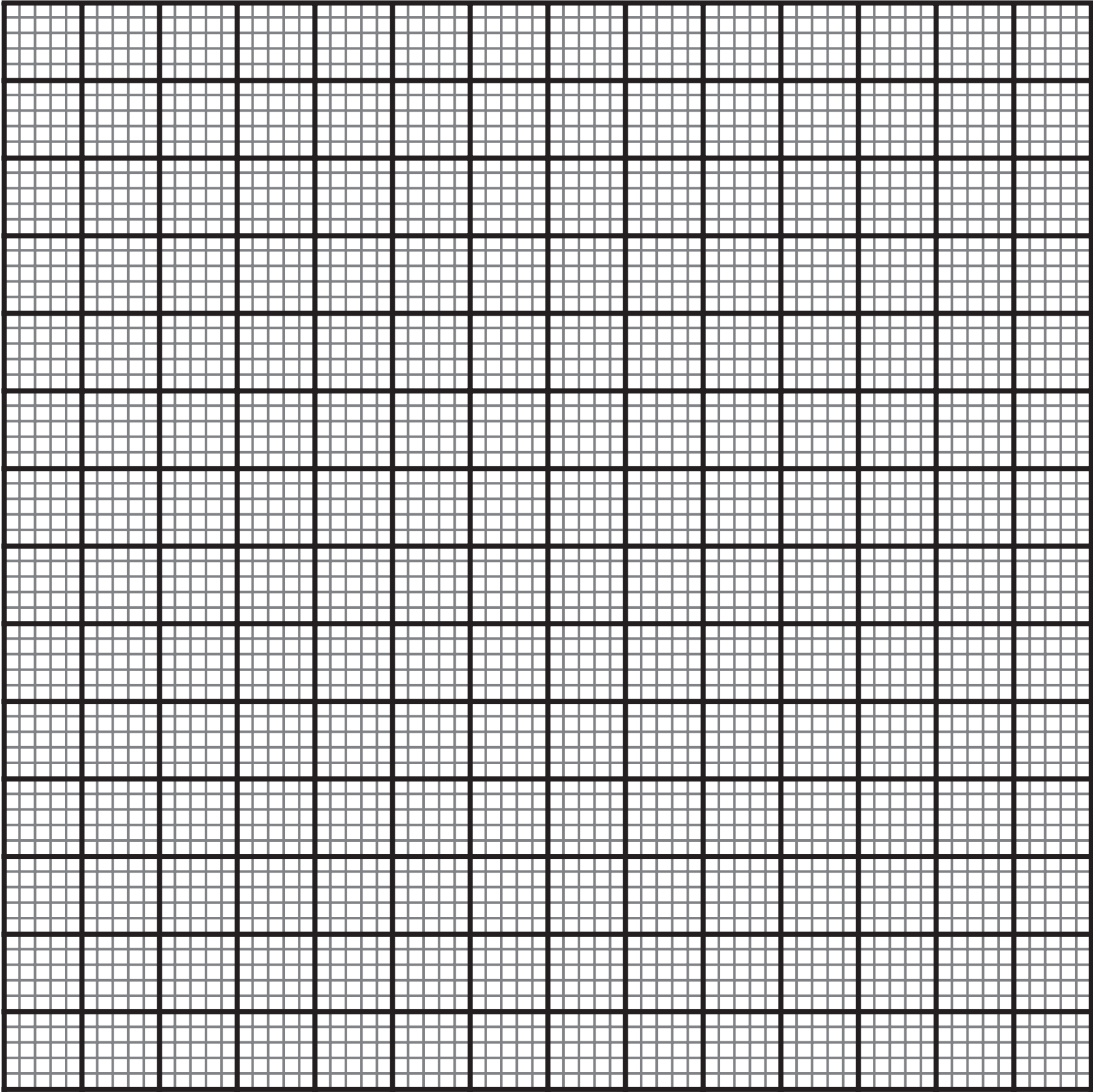
right ventricle

left atrium

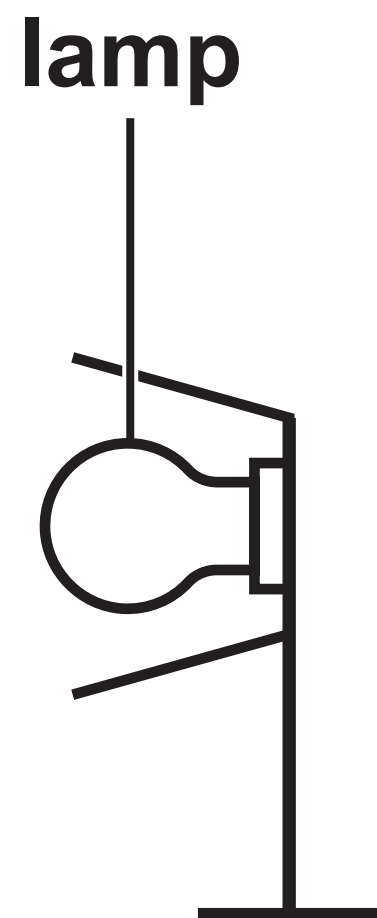
Question 5(b)

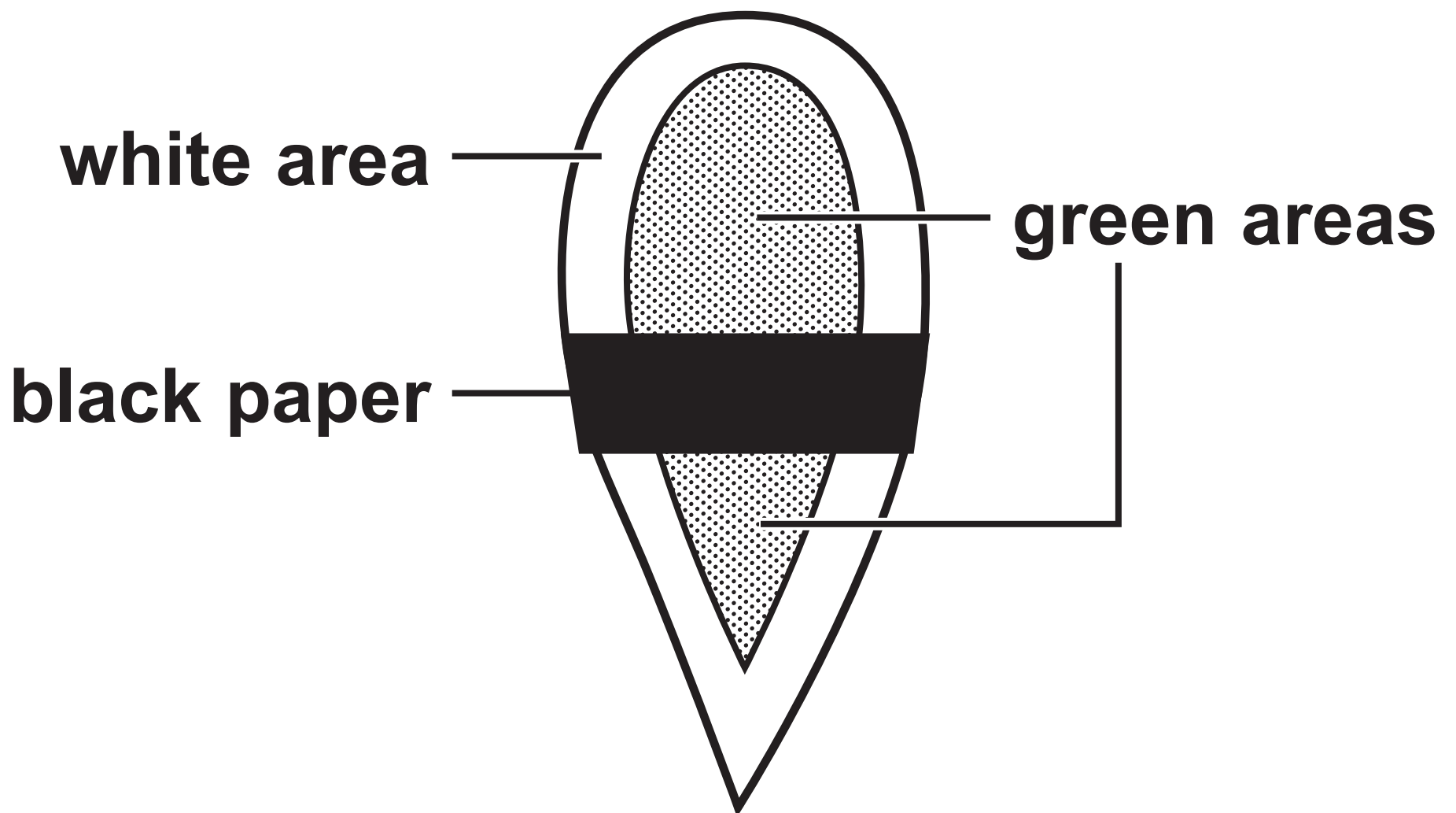
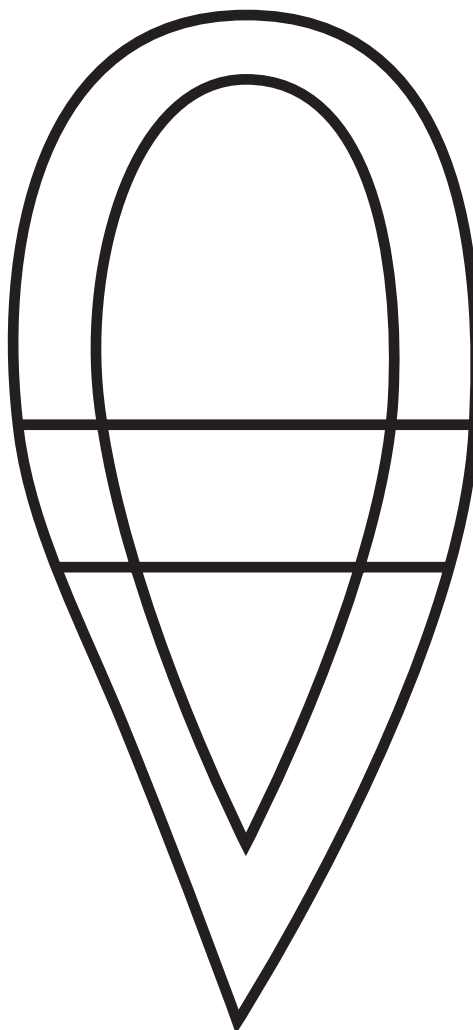
| Time in minutes | Heart rate in beats per minute (bpm) | |
|-----------------|--------------------------------------|-----------------|
| | untrained volunteer | trained athlete |
| 0 (rest) | 65 | 55 |
| 2 | 120 | 95 |
| 4 | 130 | 115 |
| 6 | 150 | 135 |
| 10 | 100 | 80 |
| 12 | 80 | 60 |

Question 5(b)(ii) – grid

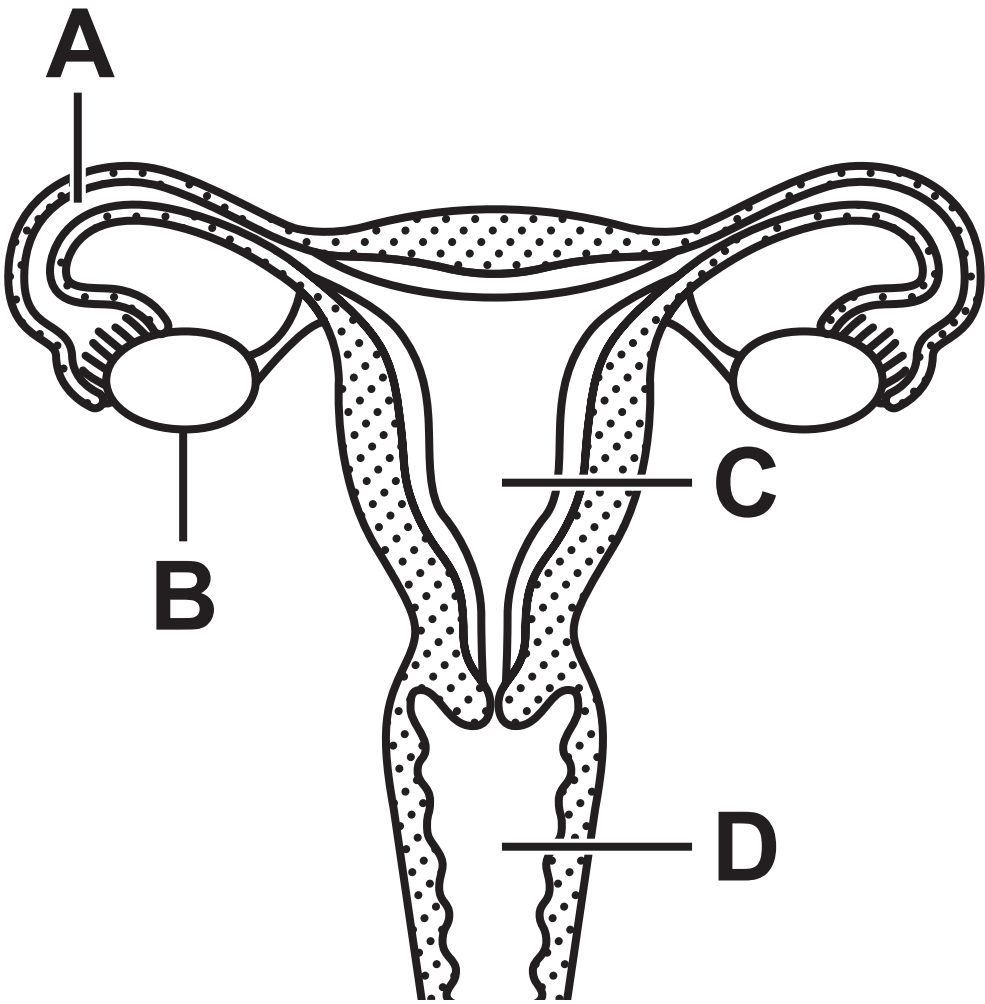


Question 6(a)



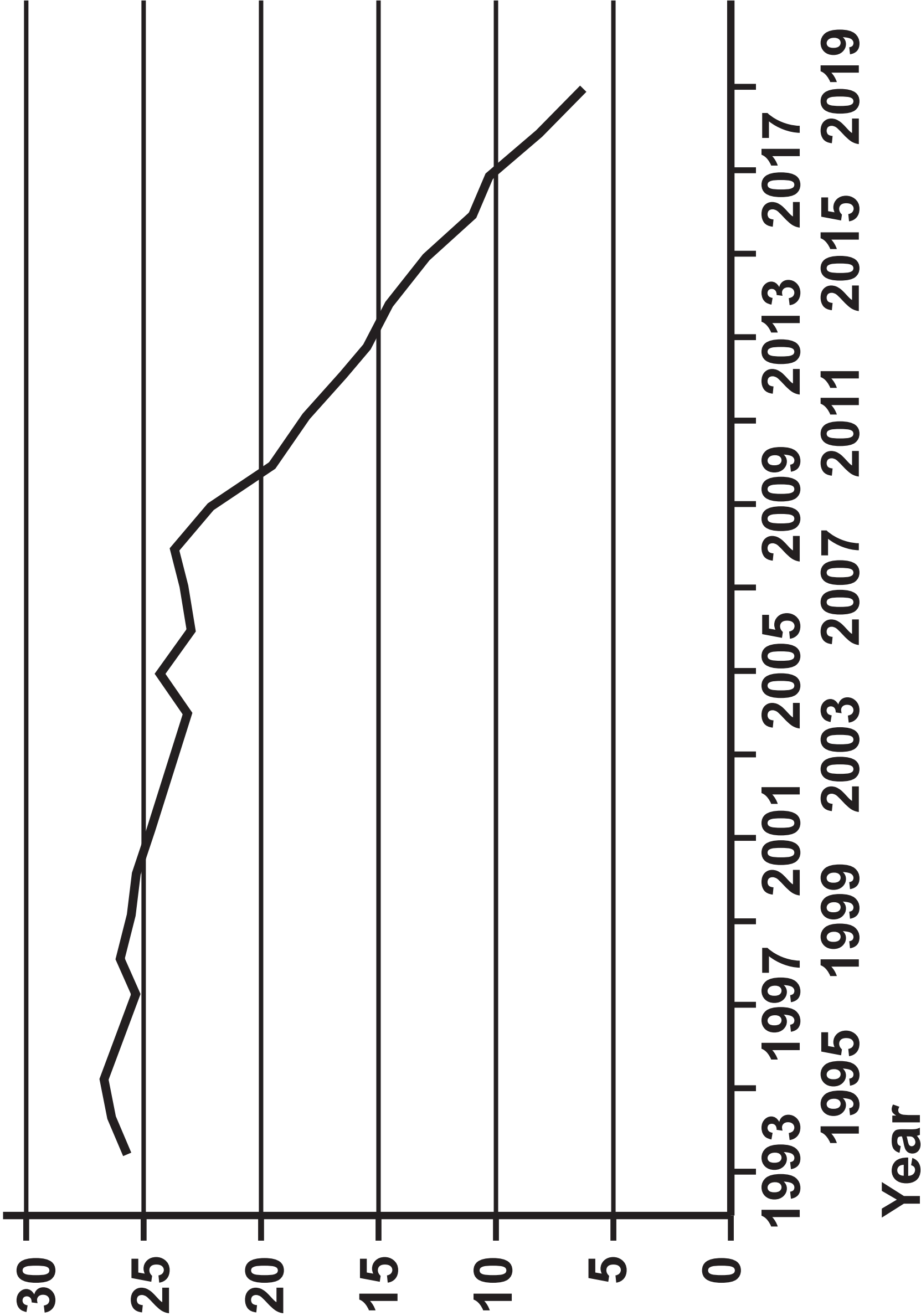
Question 6(b)(ii)**DIAGRAM 1****DIAGRAM 2**

Question 7(a)



Question 7(b)(ii) – graph

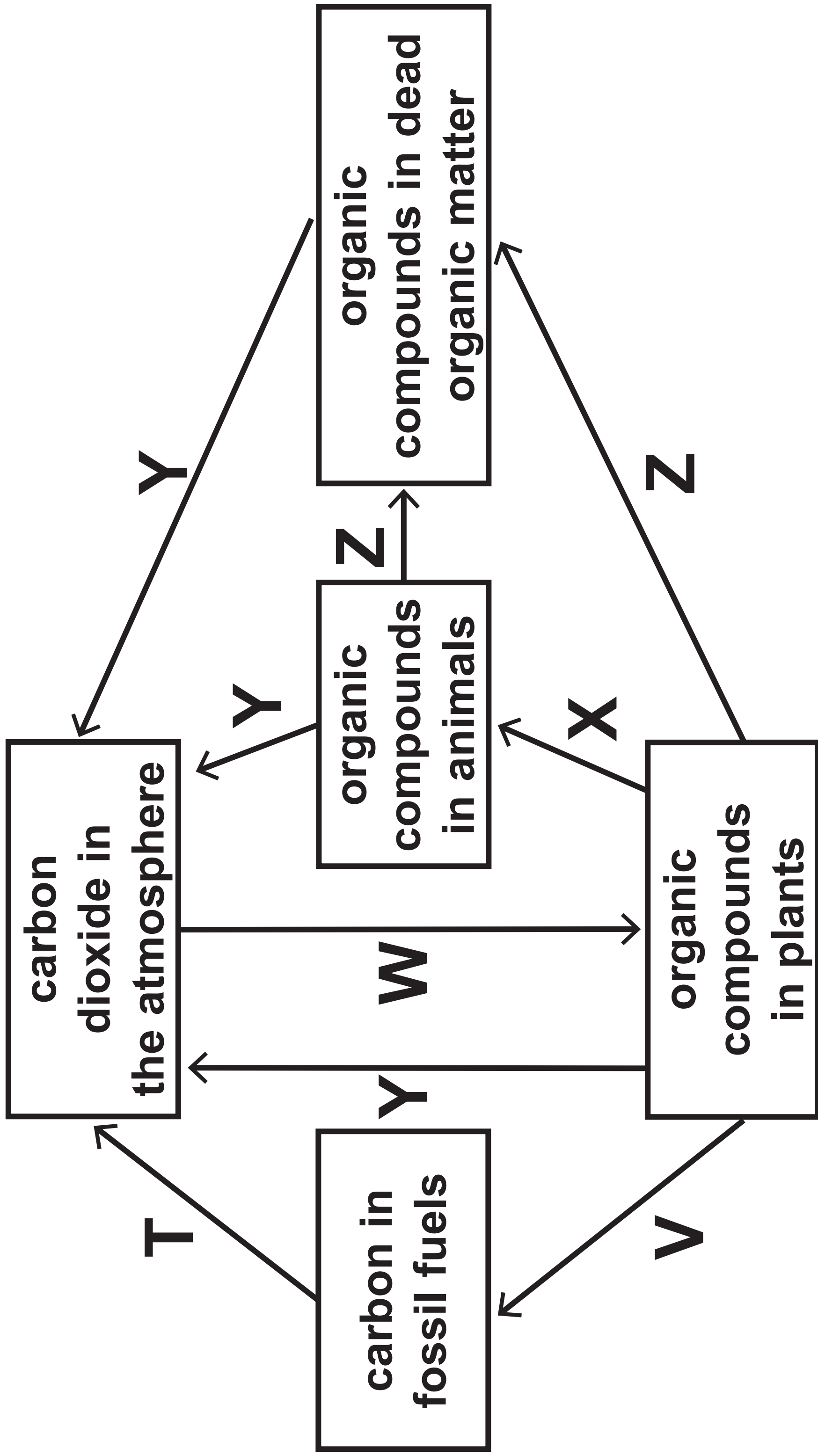
Percentage of IVF treatments that led to multiple births.



Question 7(b)(ii) – table

| Age of person receiving embryo in years | Percentage of IVF treatments that produced a baby (%) |
|--|--|
| under 35 | 32 |
| 35 to 37 | 28 |
| 38 to 39 | 19 |
| 40 to 42 | 11 |
| 43 to 44 | 5 |
| 45 to 50 | 4 |

Question 8(a)



Question 8(b)

| Greenhouse gas | Percentage of all greenhouse gas emissions (%) | Global Warming Potential (GWP) | Length of time gas stays in atmosphere in years |
|-----------------------|---|---|--|
| carbon dioxide | 77-00 | 1 | 1000 |
| methane | 16-00 | 30 | 25 |
| nitrous oxide | 0-77 | 270 | 298 |

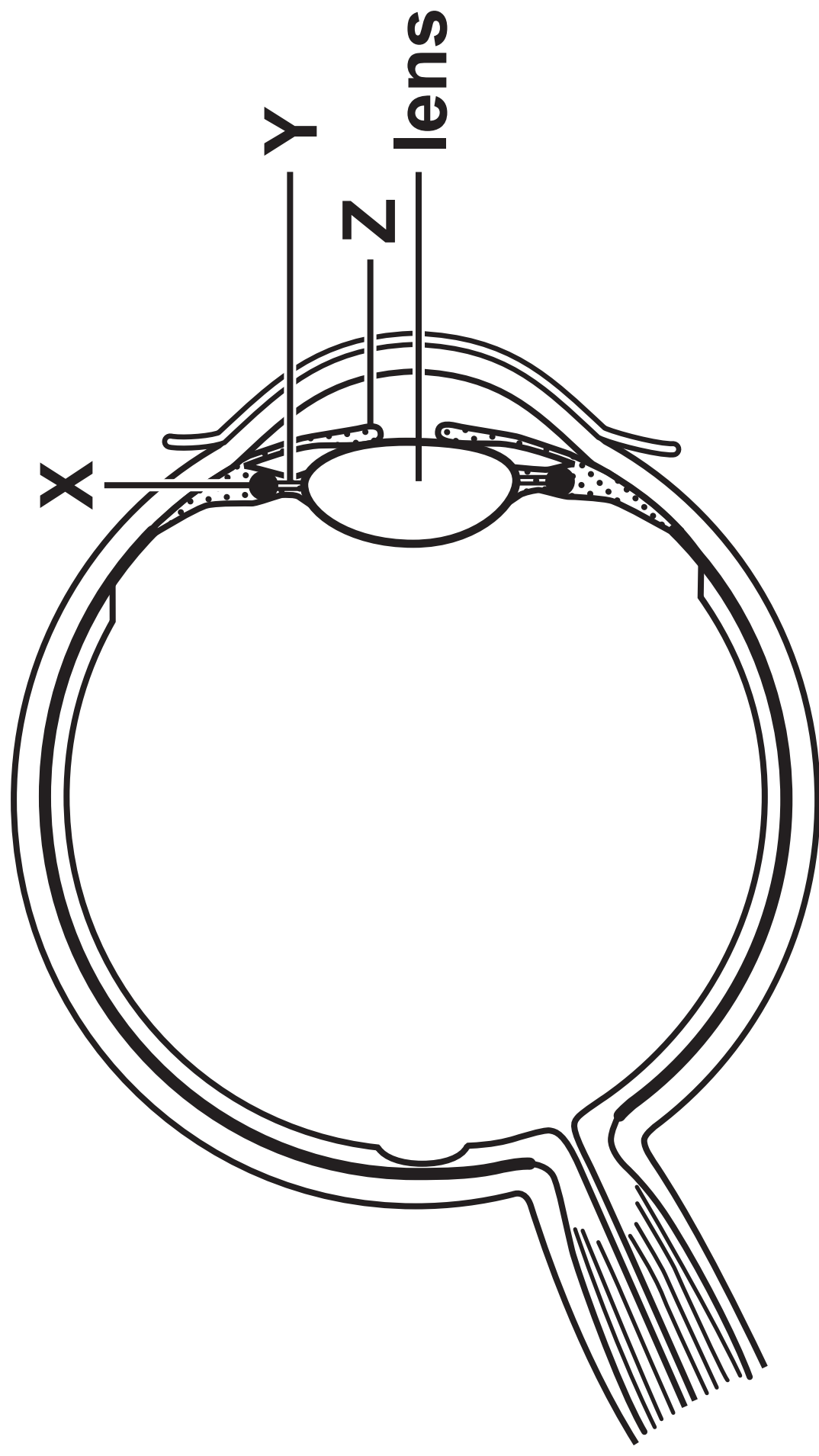
Question 9(b)

The black and white photograph shows a thin plant in a crop field. It has larger leaves towards the base of the stem, becoming smaller towards the top where there are small wheat-like flowers growing vertically.

Palmer amaranth



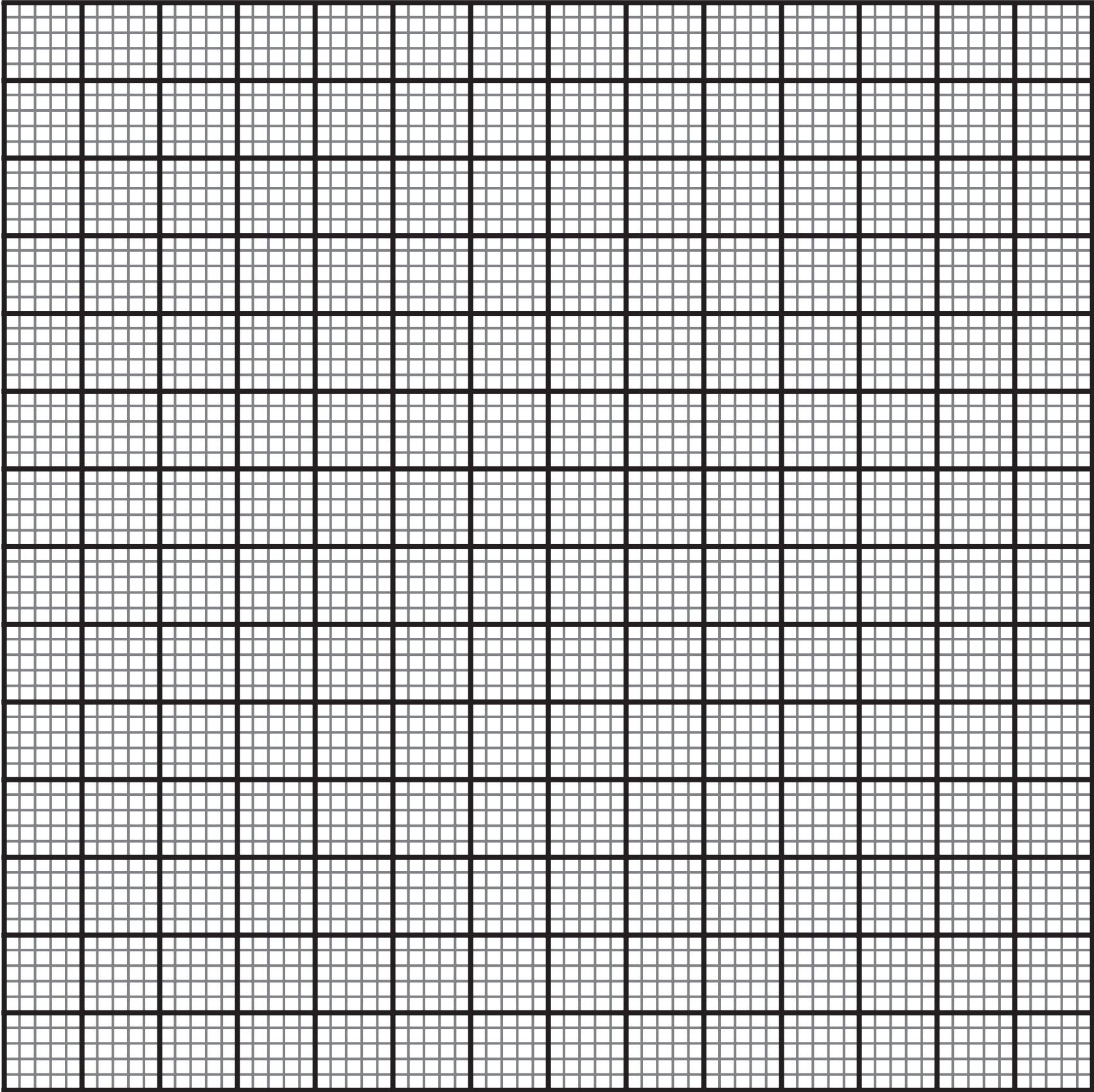
Question 9(b)(ii) – blank

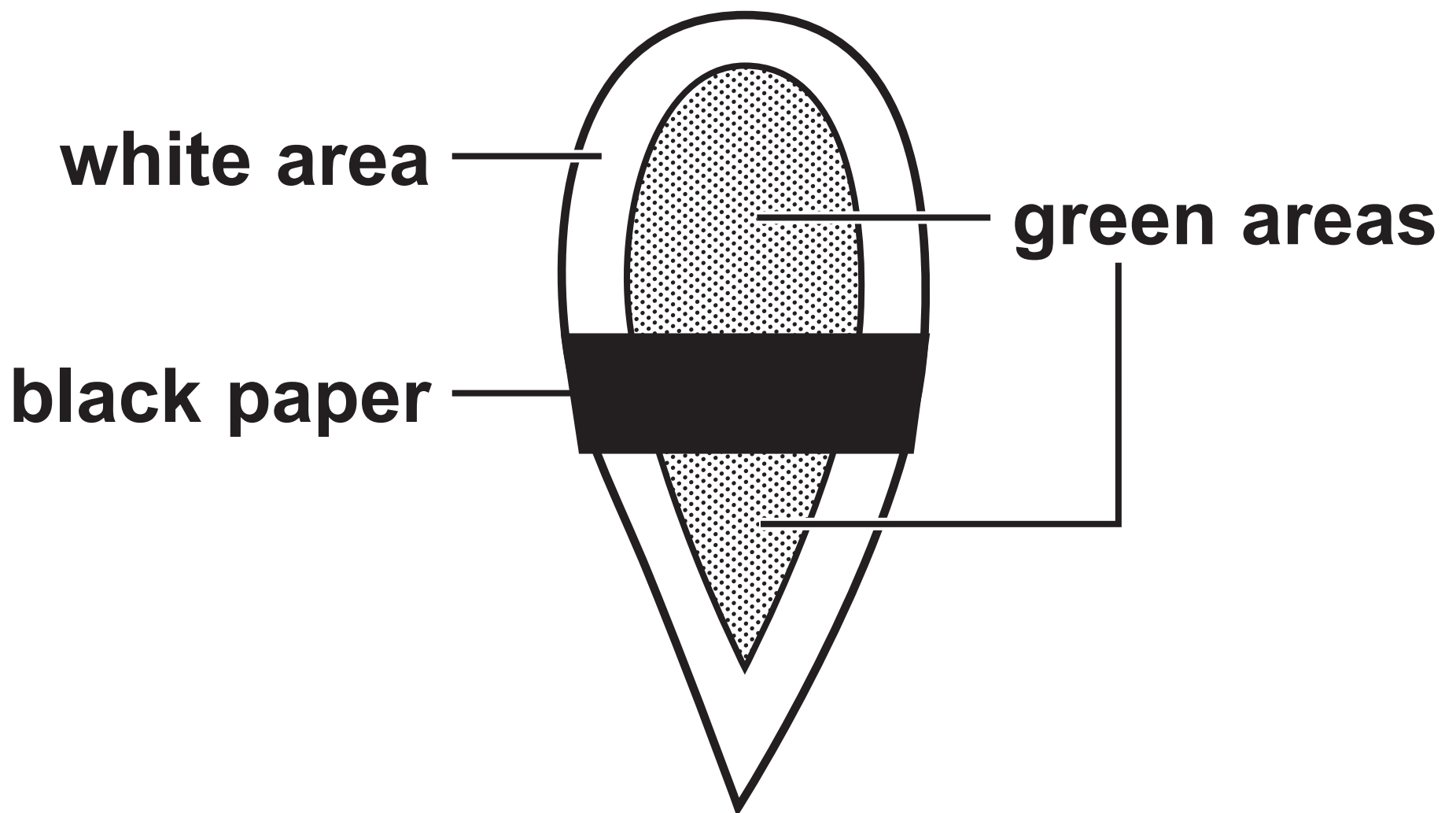
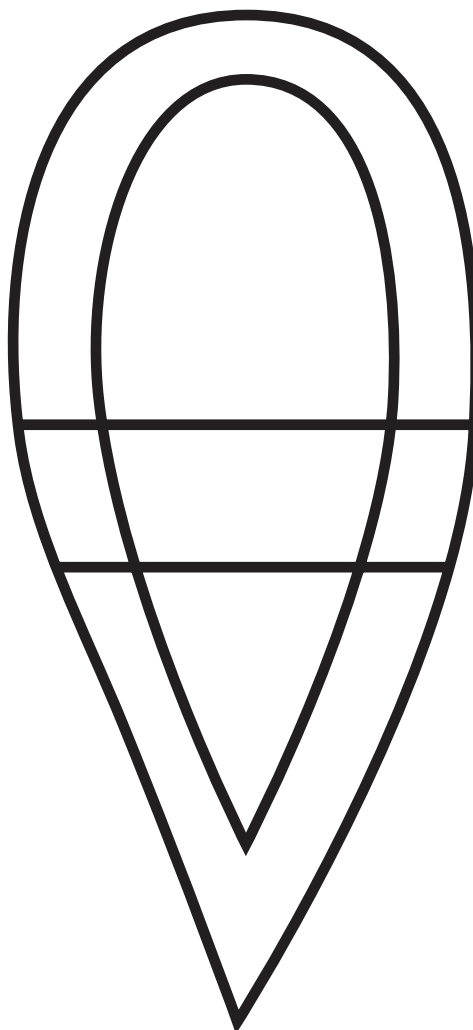


Question 10(b)

| Mean daily hours of exposure to sunlight | Number of people in group | Number of people who develop cataracts |
|--|------------------------------|--|
| 7 | 100 | 2 |
| 8 | 270 | 5 |
| 9 | 350 | 7 |
| 10 | 580 | 9 |
| 11 | 440 | 14 |
| 12 | 540 | 35 |

Question 5(b)(ii) – grid



Question 6(b)(ii)**DIAGRAM 1****DIAGRAM 2**

Question 9(b)(ii) – blank

Acknowledgements

Question 2

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Question 9(b)

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