

Paper Reference(s) 9BI0/03  
Pearson Edexcel Level 3 GCE

## Biology B

Advanced

PAPER 3: General and Practical Principles in Biology

Wednesday 21 June 2023 – Morning

### Diagram Booklet

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

<b>Surname</b>					
<b>Other names</b>					
<b>Centre Number</b>					
<b>Candidate Number</b>					

## 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.**

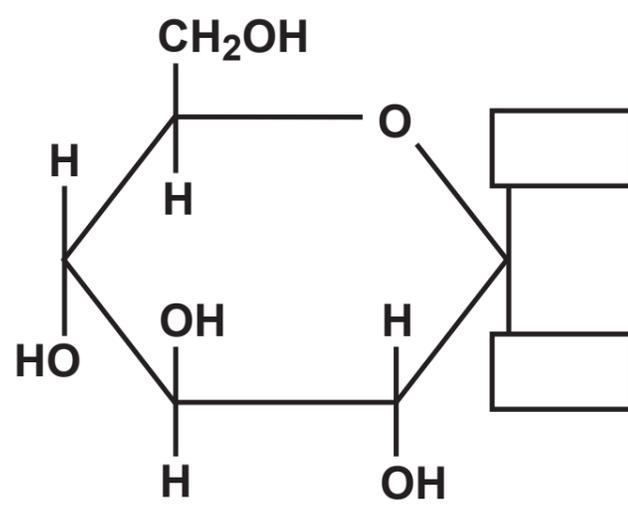
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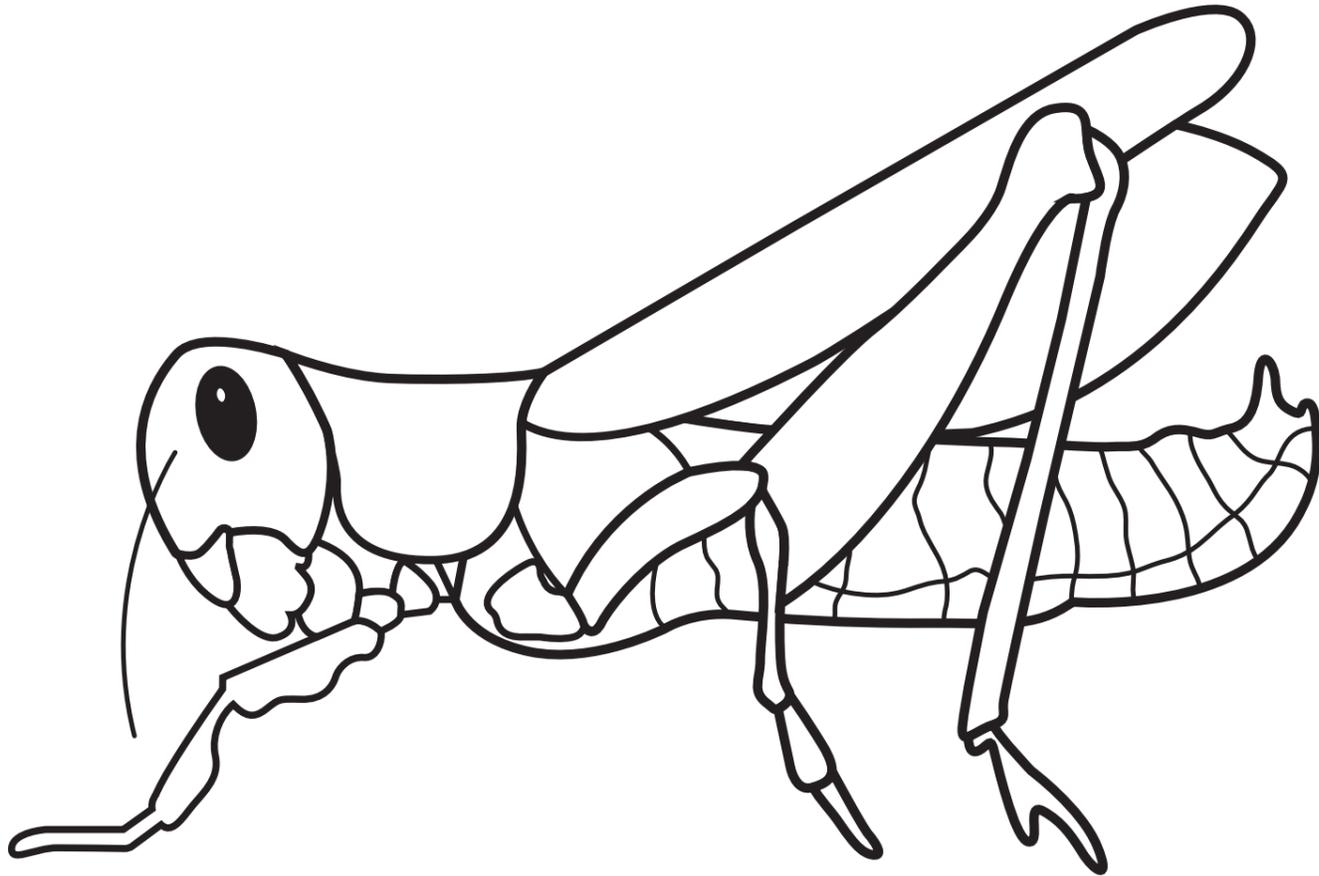
**Spare Copies**

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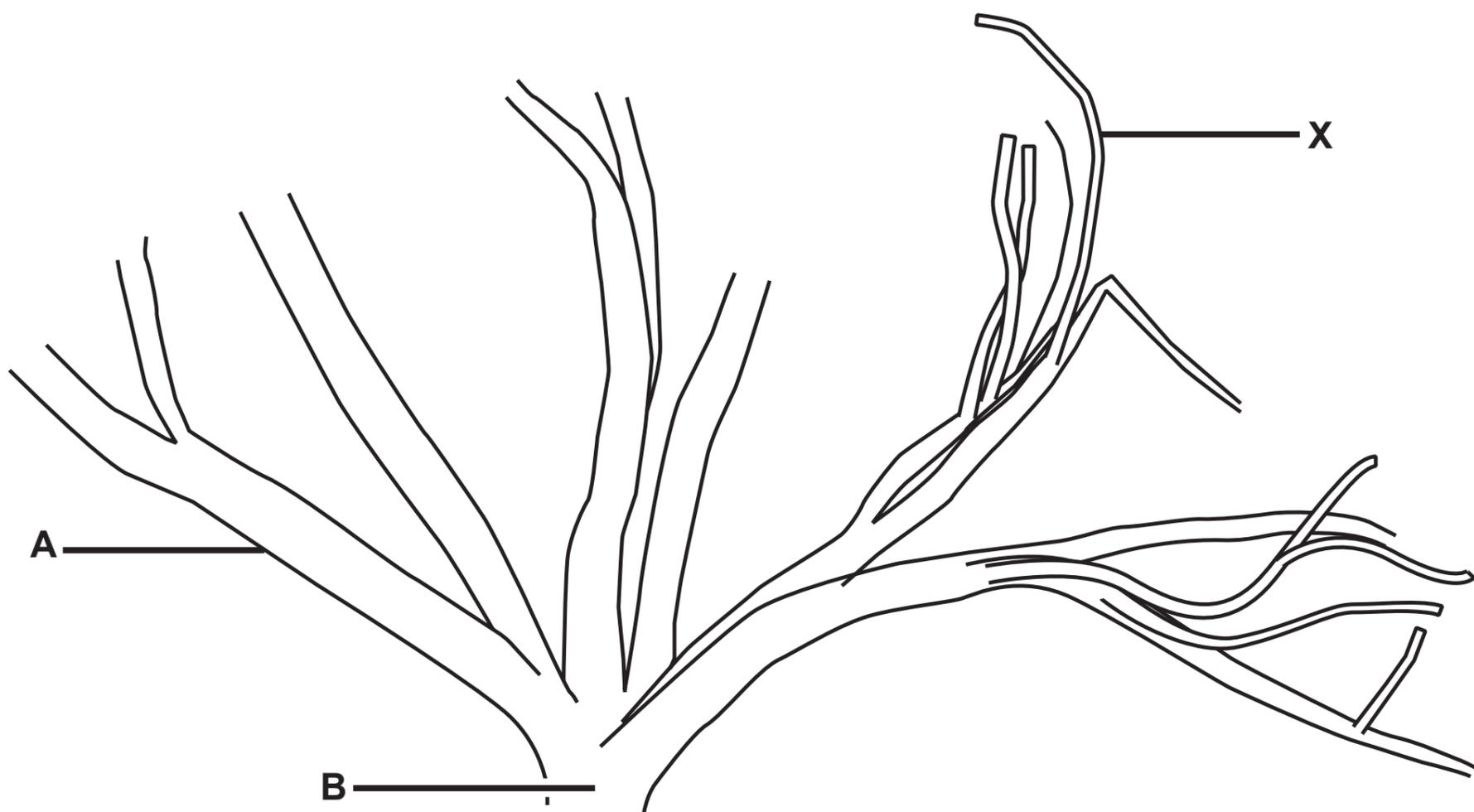
## Question 1(a)



Question 2(a)(i)



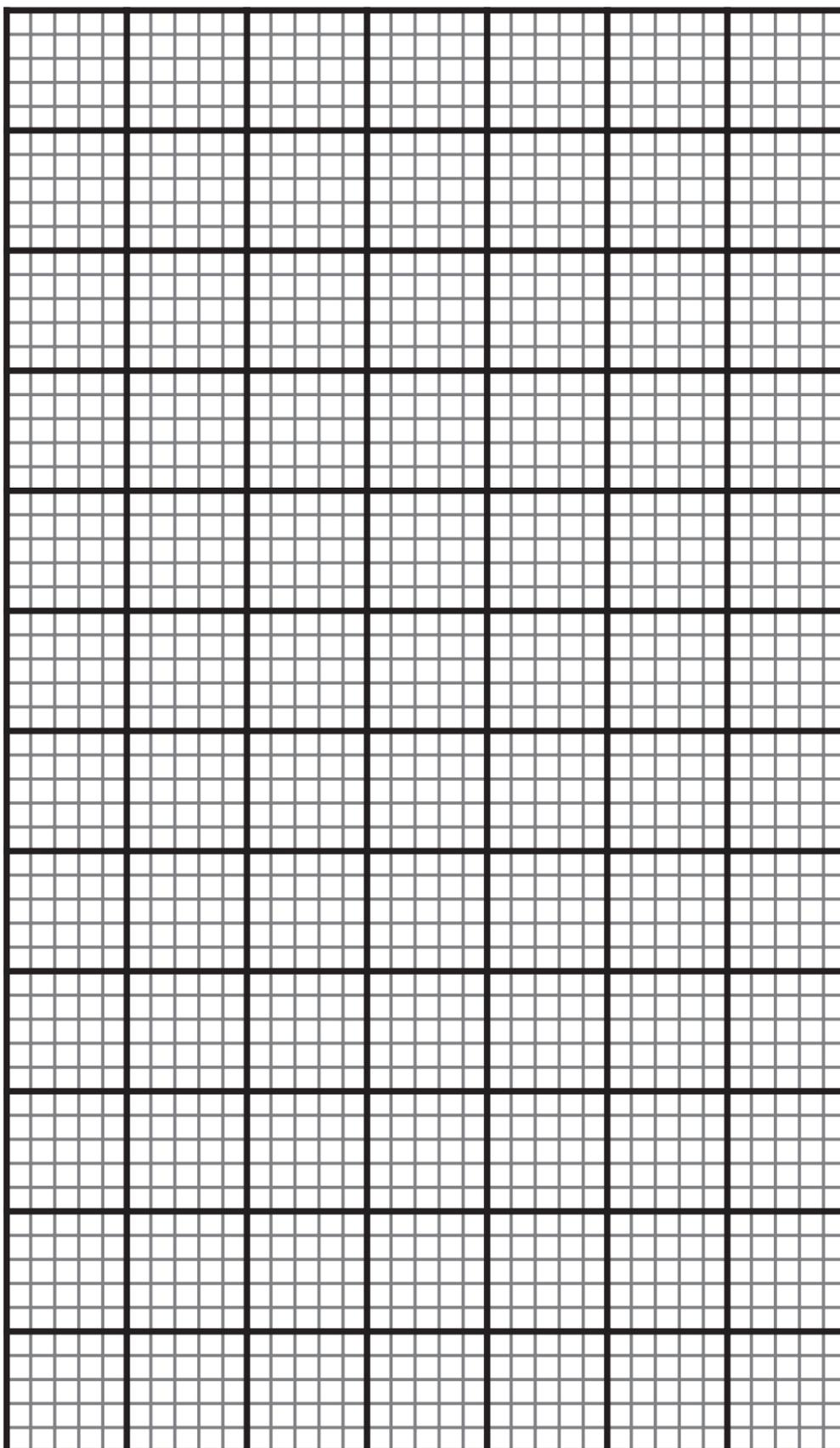
Question 2(b)



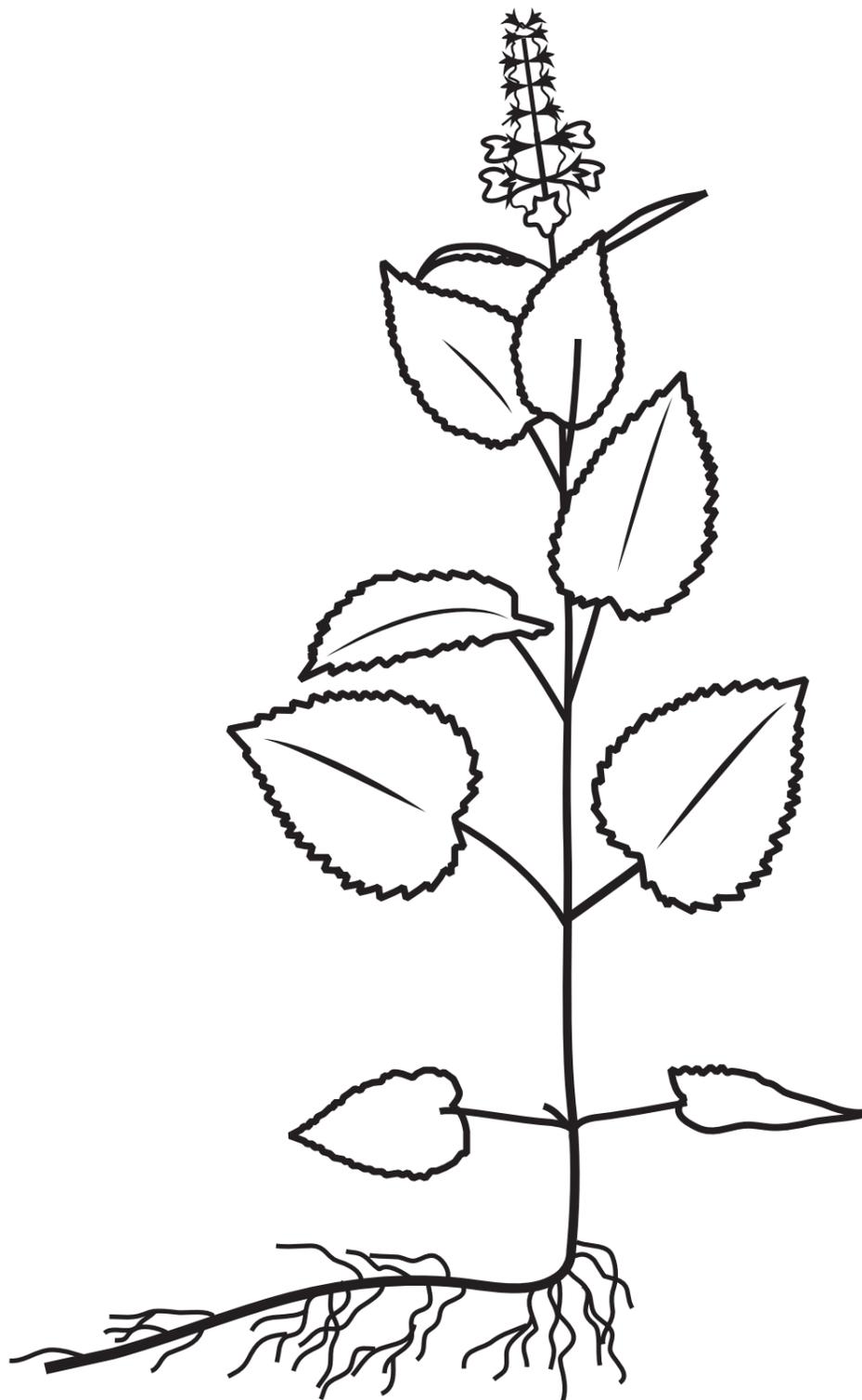
## Question 6(b)

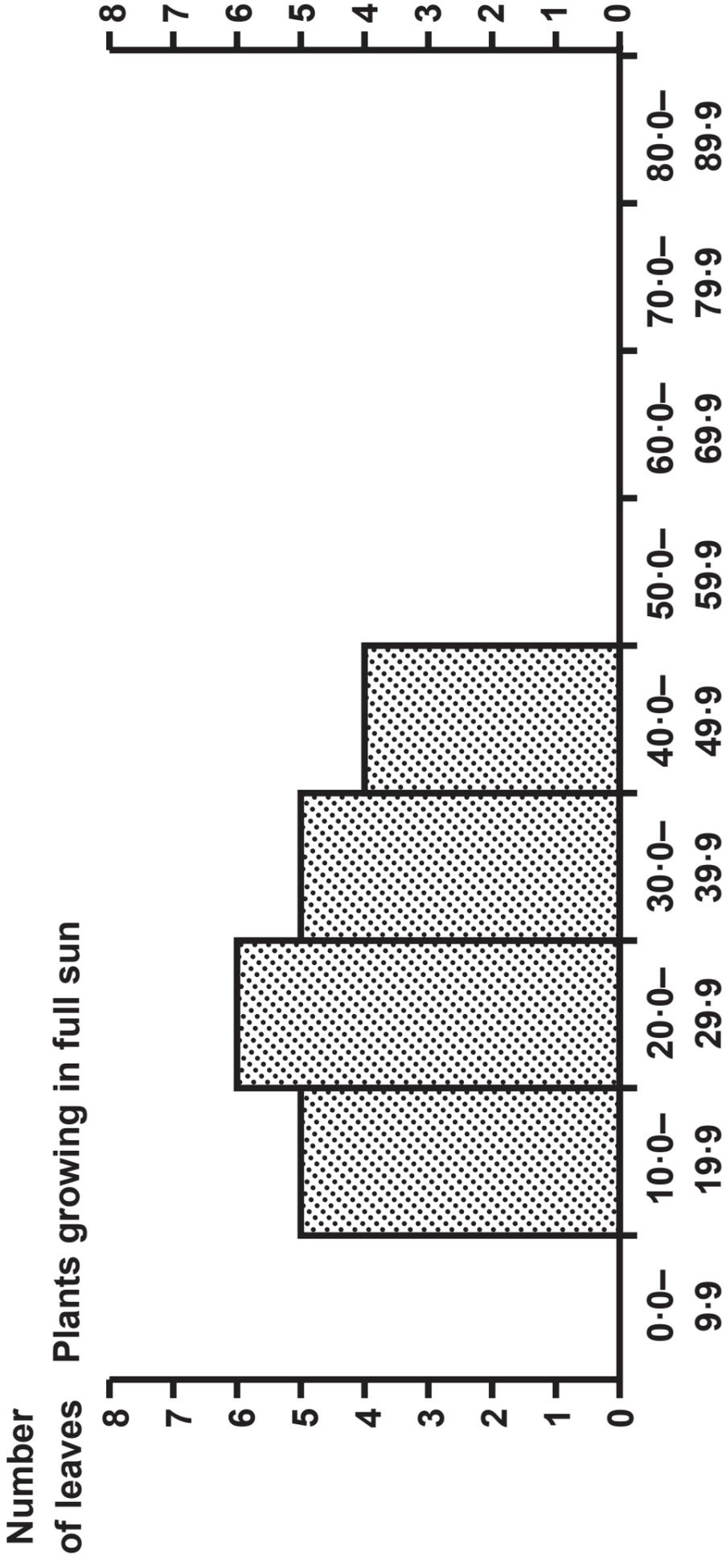
<b>Concentration of sucrose solution / mol dm<sup>-3</sup></b>	<b>0·0</b>	<b>0·1</b>	<b>0·2</b>	<b>0·3</b>	<b>0·4</b>	<b>0·5</b>
<b>Percentage change in mass of potato disc</b>	<b>+14·2</b>	<b>+1·9</b>	<b>-9·8</b>	<b>-22·7</b>	<b>-31·9</b>	<b>-37·1</b>

## Question 6(b)(i)

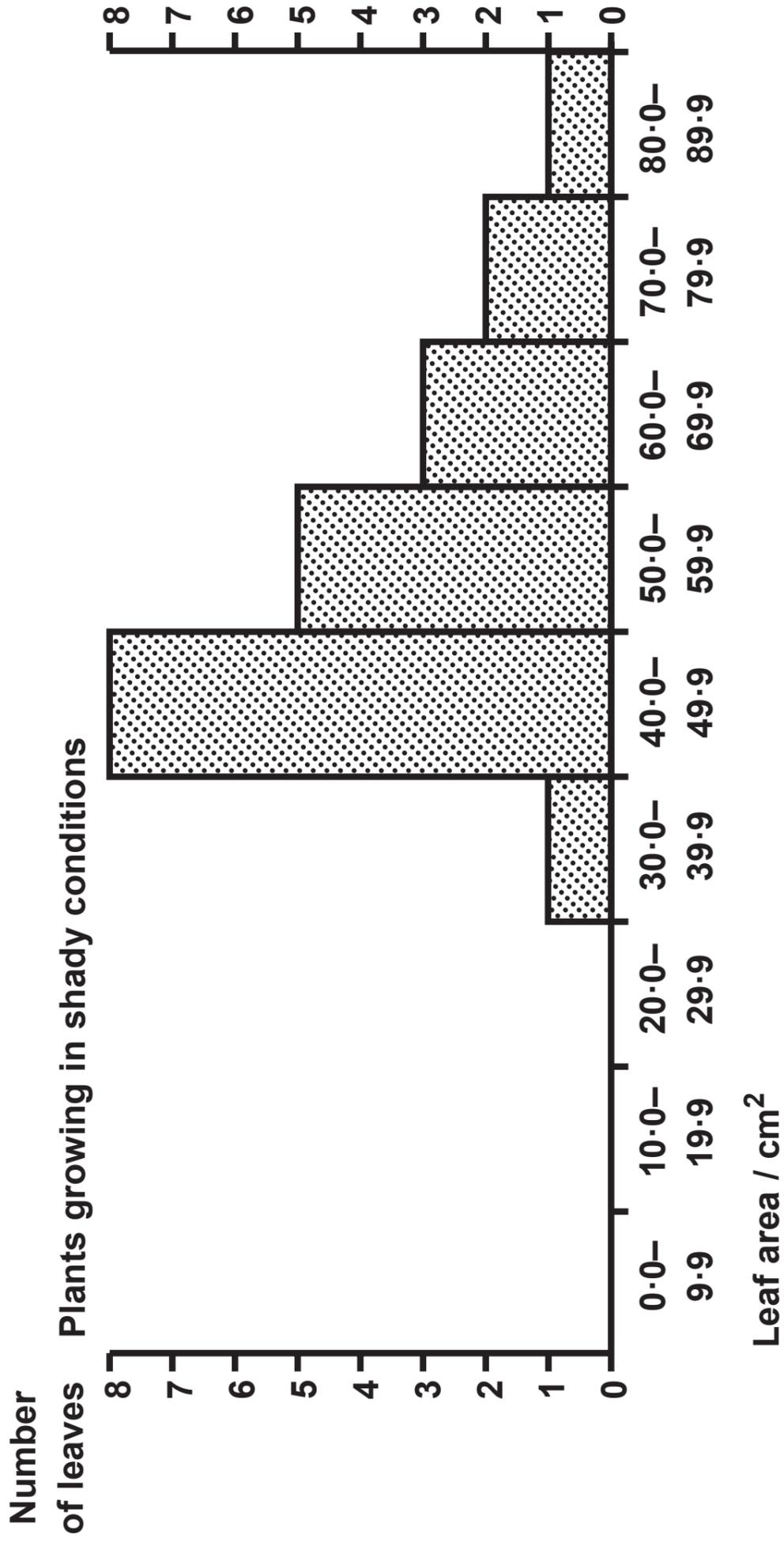


Question 7





Leaf area / cm<sup>2</sup>

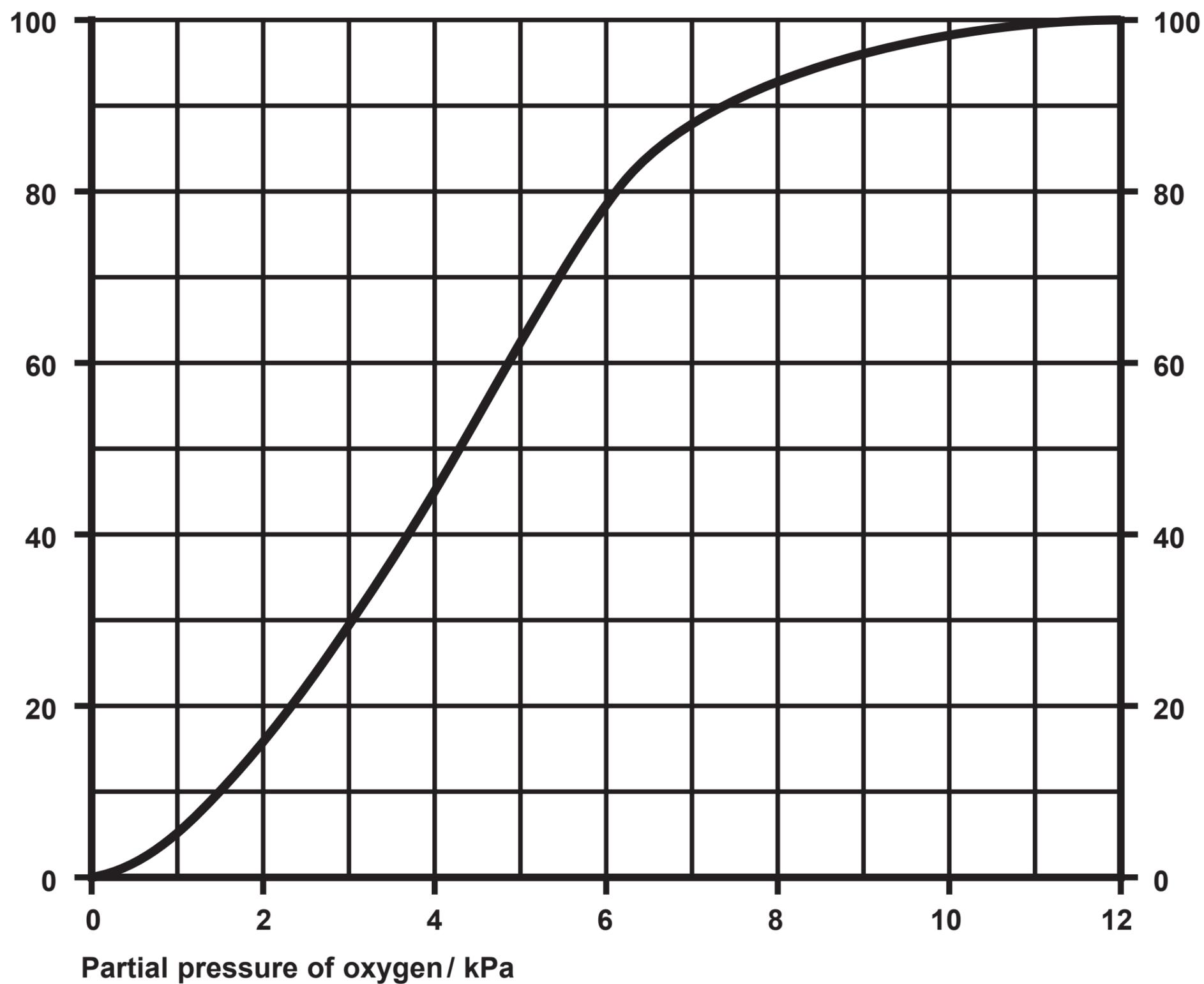


## Question 7(b)(iii)

<b>Degrees of freedom</b>	<b>p = 0.10</b>	<b>p = 0.05</b>	<b>p = 0.01</b>
20	1.73	2.09	2.85
21	1.72	2.08	2.83
22	1.72	2.07	2.82
23	1.71	2.07	2.81
24	1.71	2.06	2.80
25	1.71	2.06	2.79
26	1.71	2.06	2.78
27	1.70	2.05	2.77
28	1.70	2.05	2.76
29	1.70	2.05	2.76
30	1.70	2.04	2.75
31	1.70	2.04	2.74
32	1.69	2.04	2.74
33	1.69	2.03	2.73
34	1.69	2.03	2.73
35	1.69	2.03	2.72
36	1.69	2.03	2.72
37	1.69	2.03	2.72
38	1.69	2.02	2.71
39	1.69	2.02	2.71
40	1.68	2.02	2.70

## Question 8(a)(ii)

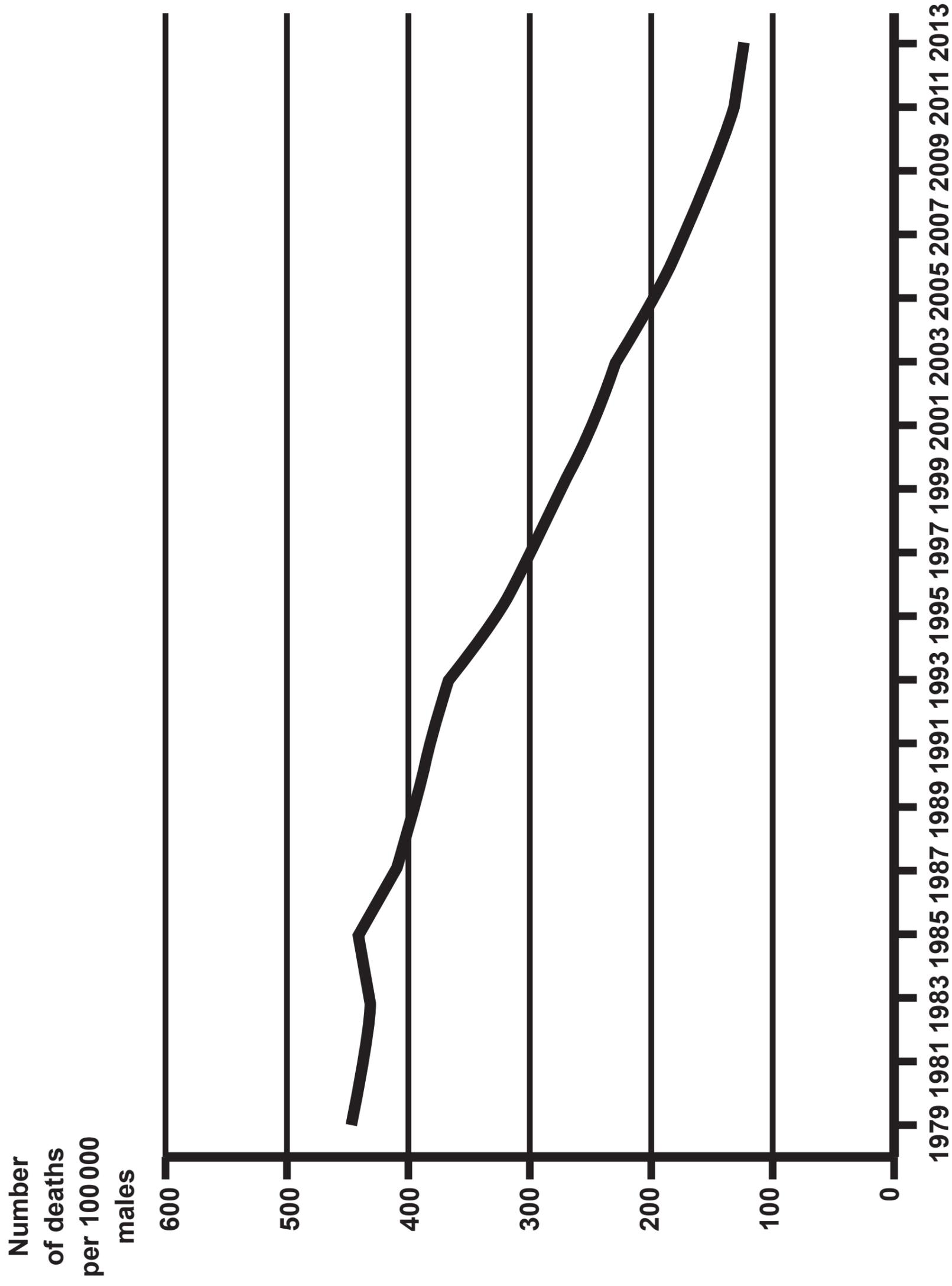
Percentage saturation of  
haemoglobin with oxygen (%)

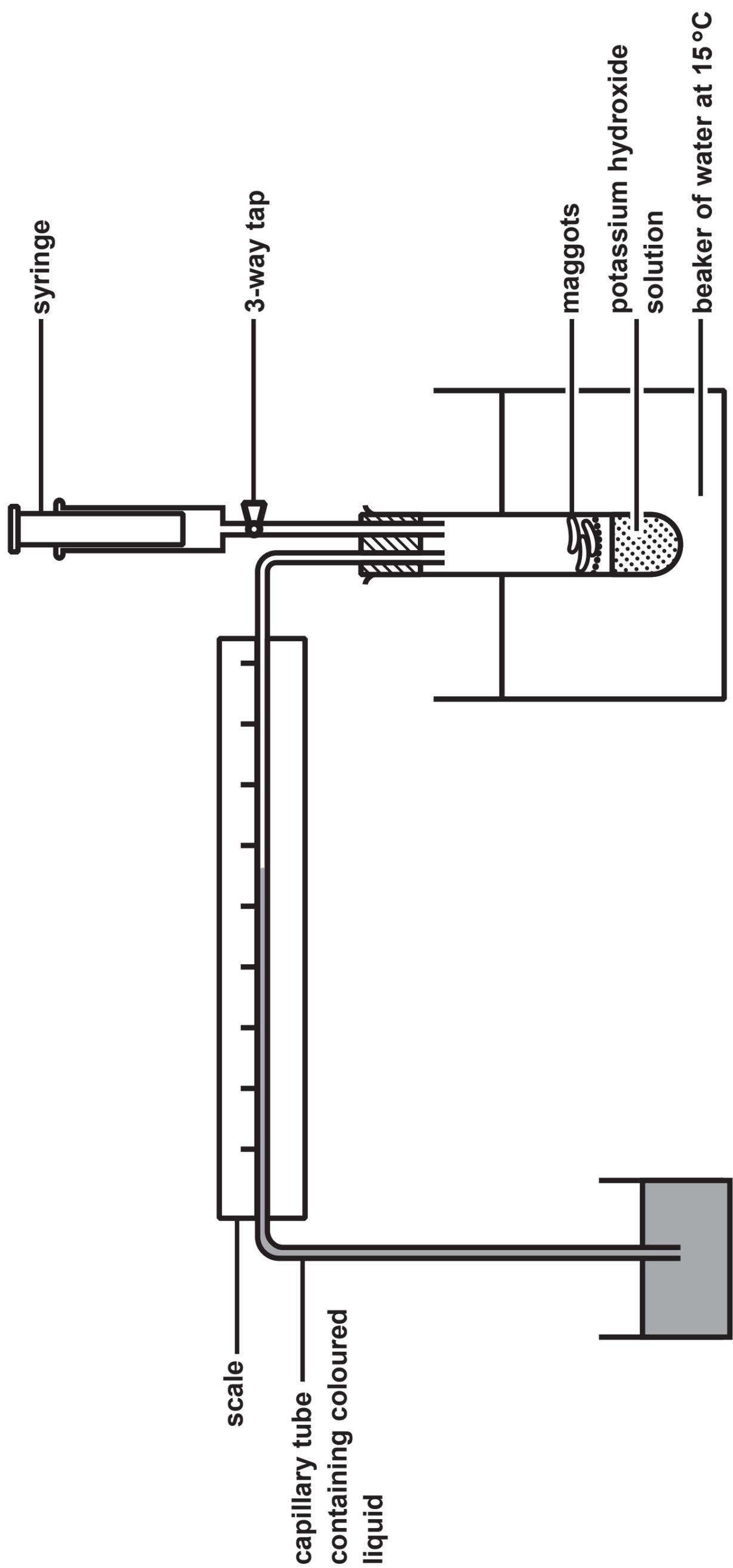


## Question 9(b)

Country or region	Number of deaths per 100 000 of population		Percentage change from 1990 to 2019 (%)
	1990	2019	
Albania	389	314	-19
Bulgaria	701	541	-23
France	196	91	-53
Montenegro	418	436	+4
Republic of Ireland	357	133	-63
UK	314	132	-58
Europe (all countries)	393	242	-38

(continued on the next page)





10 continued.

<b>Group number</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Rate of oxygen uptake / mm<sup>3</sup> min<sup>-1</sup> g<sup>-1</sup></b>	<b>0·14</b>	<b>0·16</b>	<b>0·13</b>	<b>0·12</b>	<b>0·14</b>

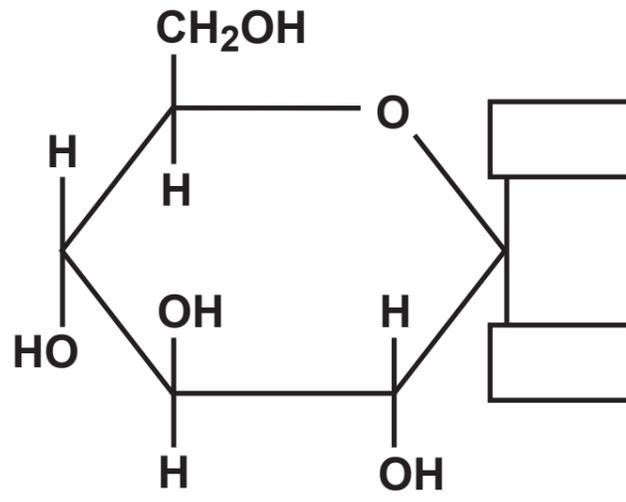
## Question 11

<b>Wild plant species</b>	<b>Total number of flowers recorded in 2020</b>	<b>Percentage change from 2019 (%)</b>
<b>Daisy</b>	<b>208 589</b>	<b>-40</b>
<b>White clover</b>	<b>101 117</b>	<b>+16</b>
<b>Selfheal</b>	<b>73 344</b>	<b>-11</b>
<b>Creeping buttercup</b>	<b>56 719</b>	<b>+48</b>
<b>Bird's-foot trefoil</b>	<b>30 646</b>	<b>-32</b>

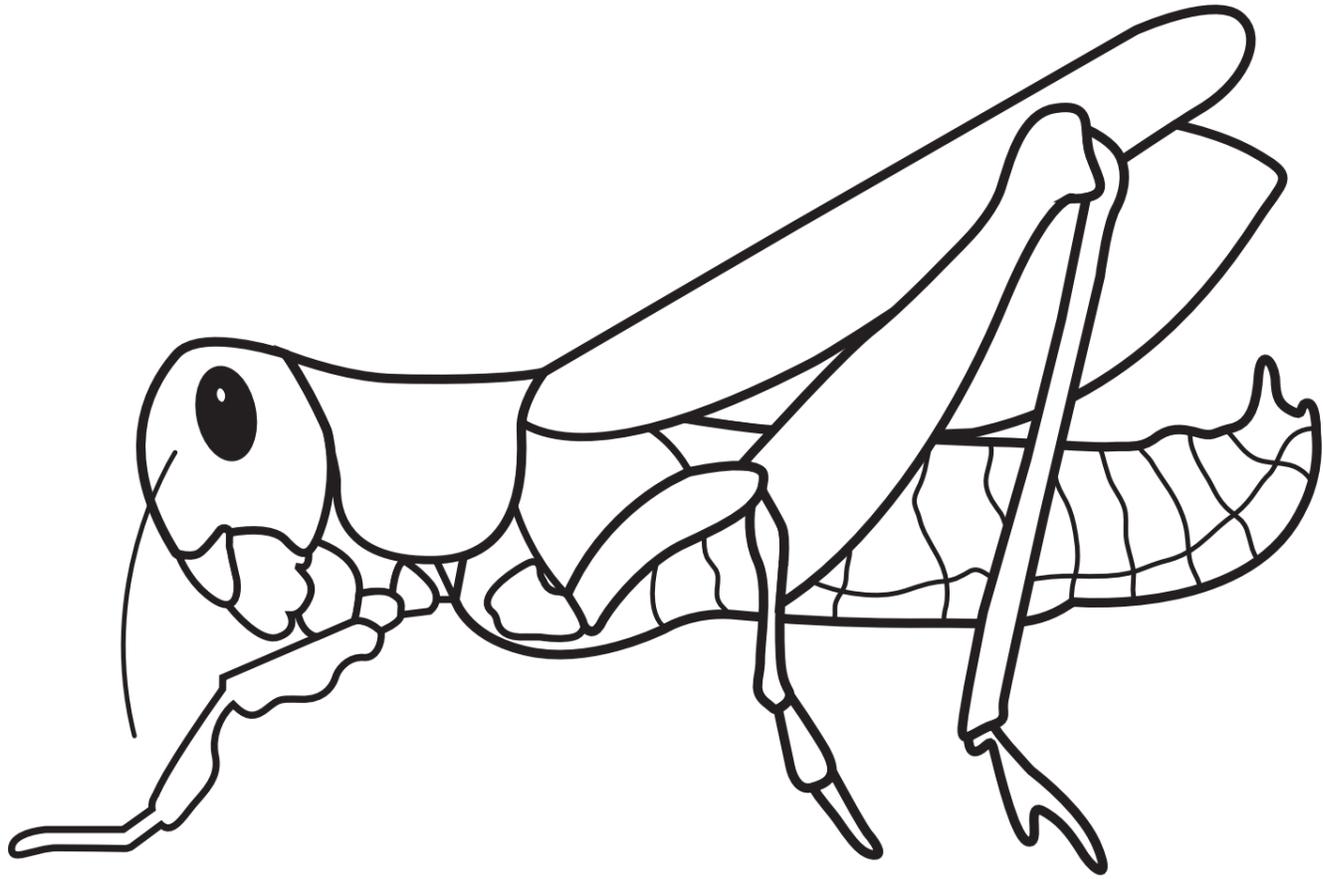
## Question 11(c)(i)

2019		2020	
Mean mass of nectar sugar / $\text{mg m}^{-2}$	Mean number of bees supported per $\text{m}^2$	Mean mass of nectar sugar / $\text{mg m}^{-2}$	Mean number of bees supported per $\text{m}^2$
41 912	3.8	38 885	

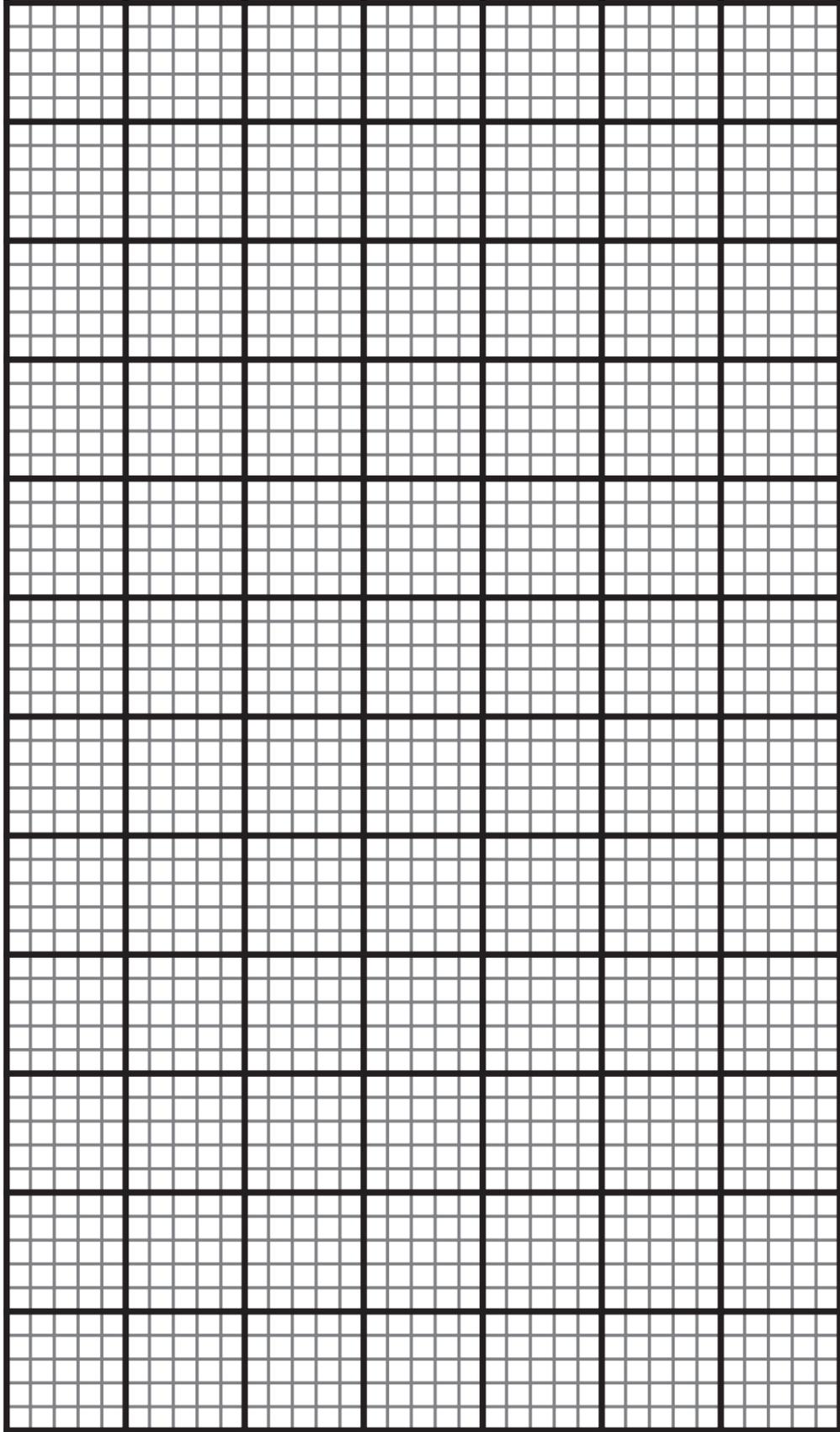
## Question 1(a)



Question 2(a)(i)

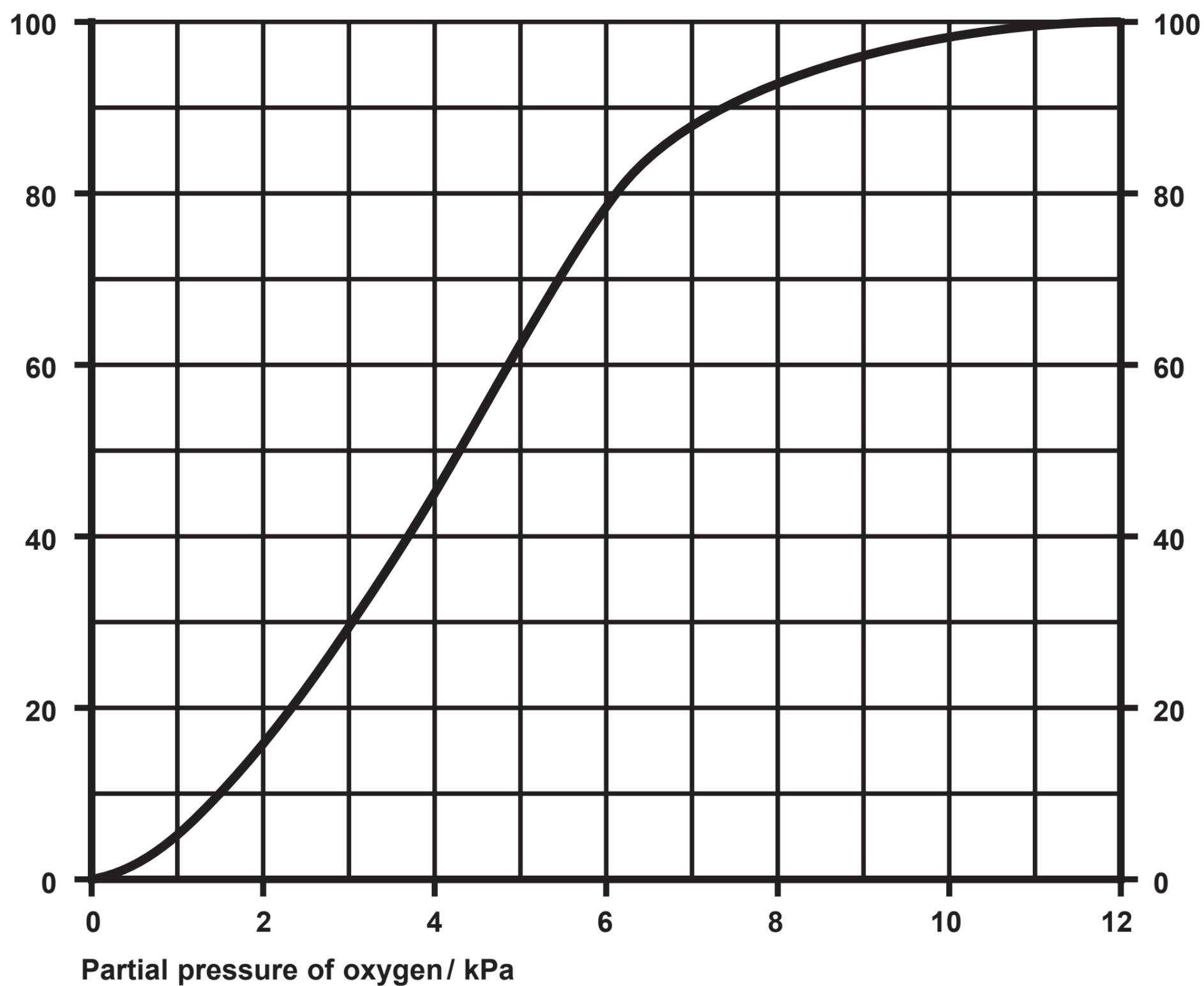


Question 6(b)(i)



## Question 8(a)(ii)

Percentage saturation of  
haemoglobin with oxygen (%)



## **Source information**

### **Question 2**

**(Source adapted from: © blickwinkel/Alamy Stock Photo)**

### **Question 7**

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