



Rewarding Learning

General Certificate of Secondary Education
2014

Centre Number

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Candidate Number

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GCSE Biology

Unit 1

Foundation Tier



[GBY11]

GBY11

FRIDAY 6 JUNE, AFTERNOON

TIME

1 hour 15 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided. Do not write outside the box, around each page or on blank pages.

Complete in blue or black ink only. **Do not write with a gel pen.**

Answer **all twelve** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is **80**.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

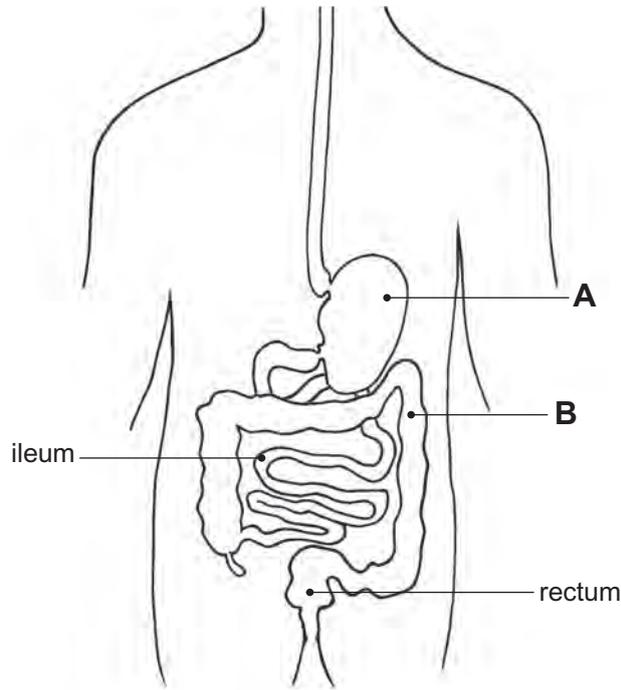
Quality of written communication will be assessed in question **8(e)**.

8678



28GBY1101

2 The diagram shows part of the human digestive system.



© CCEA

Look at the diagram.

(a) Name parts **A** and **B**.

A _____ [1]

B _____ [1]

(b) (i) What is the function of the ileum?

 _____ [1]

(ii) What is the function of the rectum?

 _____ [1]

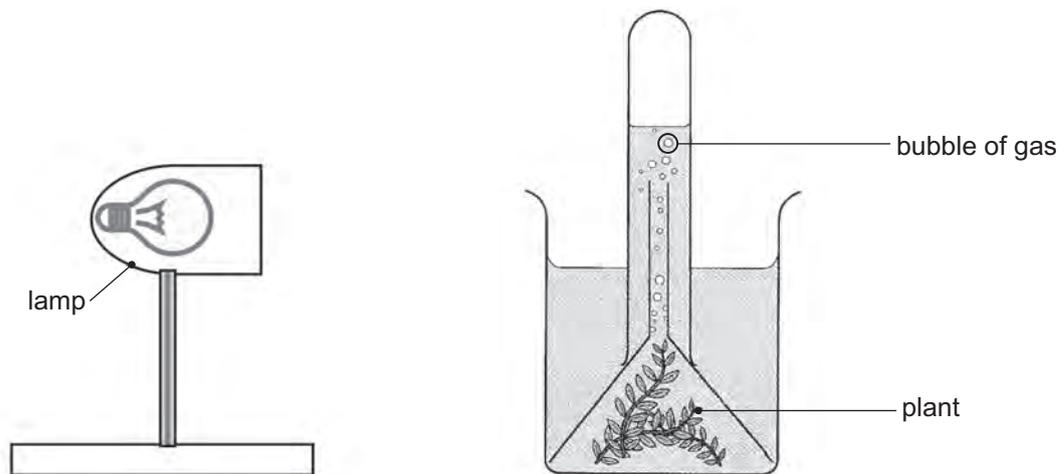
Examiner Only
 Marks Remark

Total Question 2

[Turn over



3 The diagram shows apparatus used in a photosynthesis experiment.



© GCSE Biology for CCEA 2nd Edition by James Napier, published by Hodder Education, 2011.
ISBN 978-0340983805. "Reproduced by permission of Hodder Education".

Look at the diagram.

The lamp was placed at different distances from the plant.

(a) What factor does this change?

_____ [1]

(b) Photosynthesis was measured by counting the bubbles of gas given off by the plant.

(i) Name the gas in the bubbles.

_____ [1]

(ii) Suggest why measuring the volume of the gas would be more accurate than counting the bubbles.

_____ [1]

Examiner Only

Marks Remark



(iii) Name **one other** substance produced by the plant during photosynthesis.

[1]

(c) Photosynthesis takes place in part of a plant cell.

Draw a **circle** around the name of this part.

chromosome

chloroplast

cytoplasm

[1]

Examiner Only

Marks Remark

Total Question 3

[Turn over



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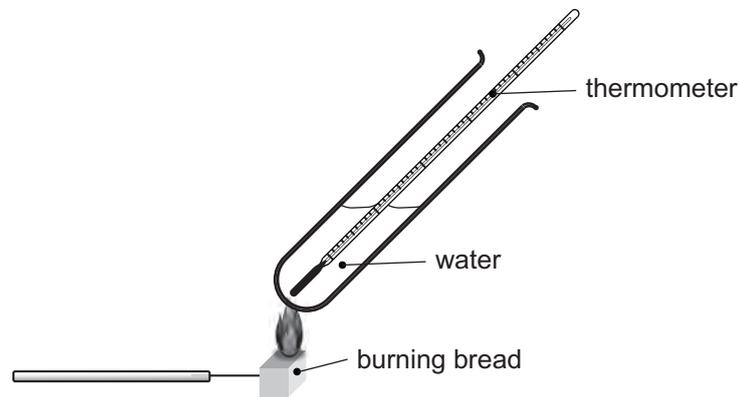
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28GBY1107

- 5 (a) The diagram shows the apparatus used to compare the energy in three types of bread.



© CCEA

The results are shown in the table.

Type of bread	Temperature of water at start/ $^{\circ}\text{C}$	Temperature of water at end/ $^{\circ}\text{C}$	Rise in temperature of water/ $^{\circ}\text{C}$
White bread	19	38	19
Brown bread	20	35	
Soda bread	18	41	23

- (i) Complete the table by calculating the rise in temperature of the water caused by burning the brown bread.

Examiner Only	
Marks	Remark

[1]

- (ii) A man doing hard work eats a sandwich for his lunch.

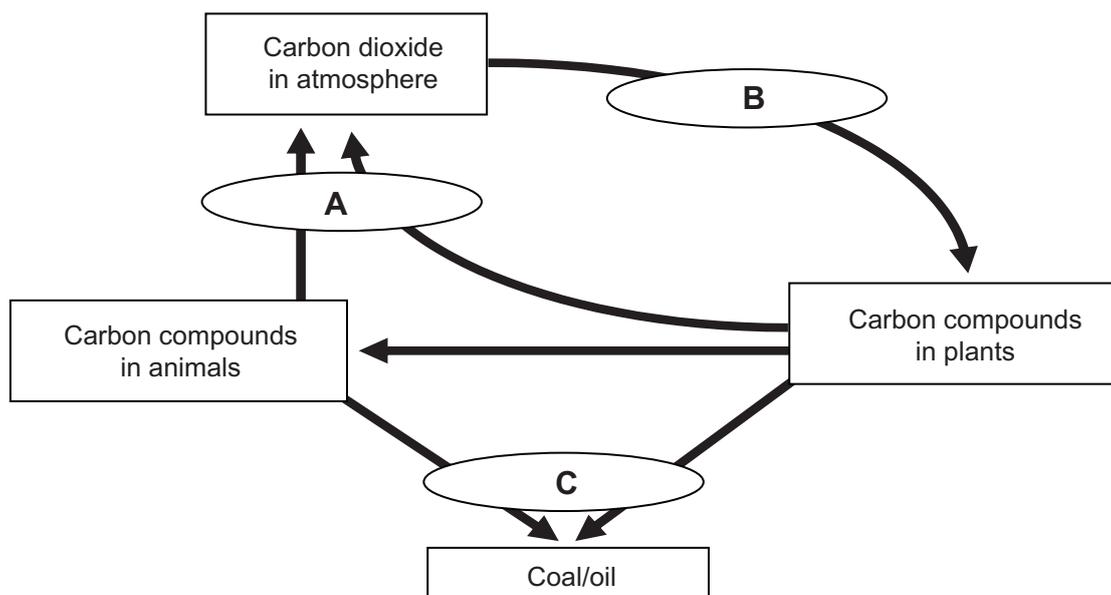
Use the results in the table to help explain which type of bread he should choose.

[2]

8678



6 (a) The diagram shows part of the carbon cycle.



Look at the diagram.

(i) Name processes **A**, **B** and **C**.

A _____ [1]

B _____ [1]

C _____ [1]

(ii) How does process **C** reduce carbon dioxide in the atmosphere?

_____ [1]

(b) Over the last 100 years the amount of carbon dioxide in the atmosphere has increased.

(i) Suggest **two ways** humans are causing this increase.

1. _____ [1]

2. _____ [1]

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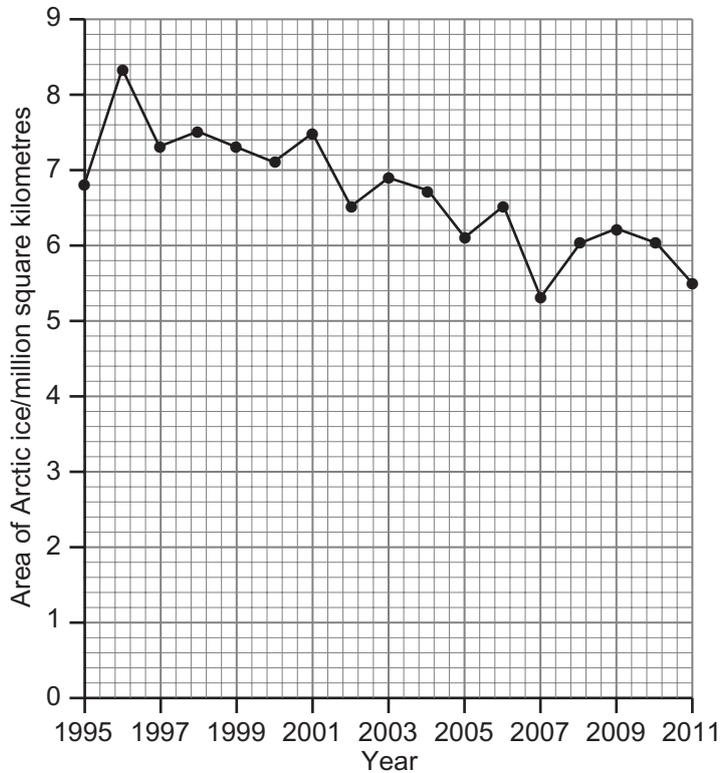


28GBY1110



The increase of carbon dioxide in the atmosphere has affected the area of Arctic ice.

The graph shows changes in the area of Arctic ice.



© National Snow and Ice Data Center - Average Monthly Arctic Sea Ice Extent August 1979-2012

Look at the graph.

(ii) Draw a straight line of best fit to show the trend from 1995 to 2011. [1]

The decrease in the area of Arctic ice has harmful effects on the environment.

(iii) Suggest **two** of these harmful effects.

1. _____

_____ [1]

2. _____

_____ [1]

Examiner Only	
Marks	Remark

Total Question 6

[Turn over



7 The photographs show two areas in a woodland.

Area **A** has trees which keep their leaves all year round.
Area **B** has trees which lose their leaves in winter.

Area A



© W Broadhurst/ Science Photo Library

Area B



© Bob Gibbons/Science Photo Library

Pupils measured the biodiversity of each area in the woodland.

(a) Explain what is meant by biodiversity.

_____ [1]

(b) Pupils sampled the number of plant species and crawling insect species in ten places in each area of woodland.

(i) Name the apparatus used to sample the number of plant species.

_____ [1]

(ii) Name the apparatus used to sample the number of crawling insect species.

_____ [1]

Examiner Only	
Marks	Remark

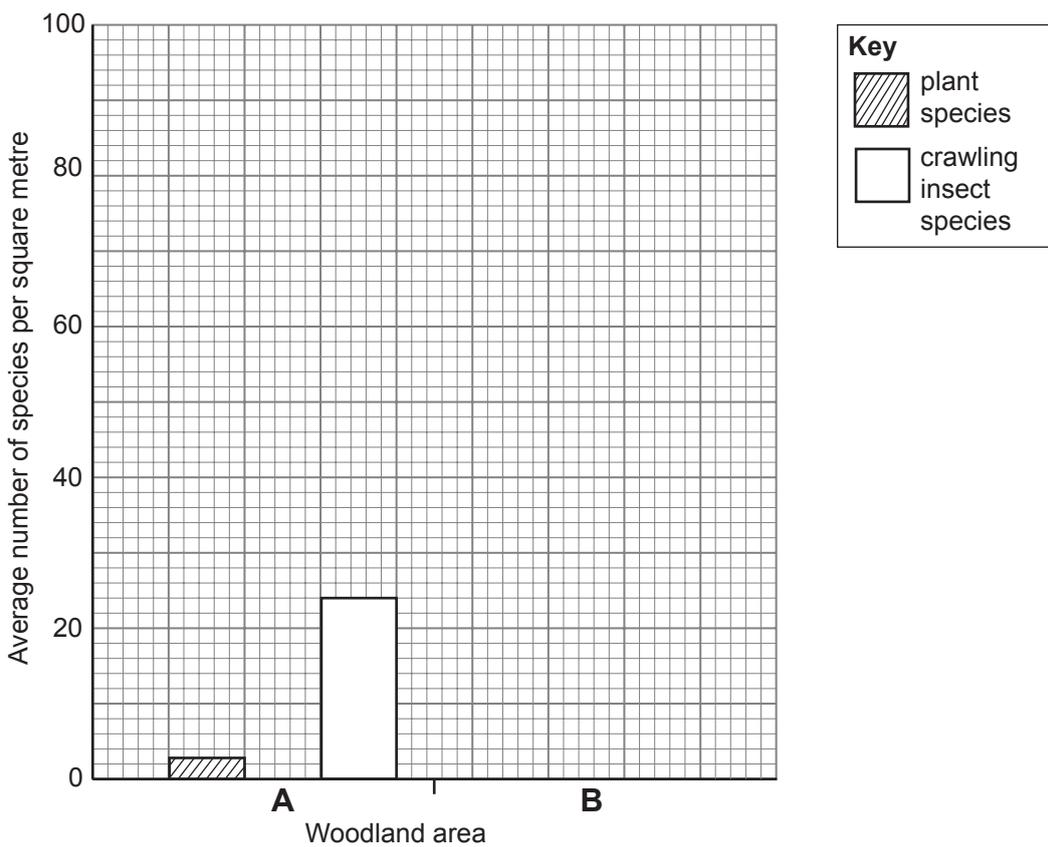


The table shows the average number of species found in each area of woodland.

Woodland area	Average number per square metre	
	Plant species	Crawling insect species
A	3	24
B	10	82

Examiner Only	
Marks	Remark

(c) (i) Complete the bar chart of these results.



[2]

(ii) What do the results tell you about the biodiversity of the two areas in the woodland?

[2]

[Turn over



(iii) Environmental factors affecting the numbers of species can be biotic or abiotic.

Which **three abiotic** factors may have caused the difference in the number of species in these two woodland areas.

Place a tick (✓) in the appropriate boxes.

Disease	<input type="checkbox"/>	Light	<input type="checkbox"/>
Soil water	<input type="checkbox"/>	Minerals	<input type="checkbox"/>
Predation	<input type="checkbox"/>	Competition	<input type="checkbox"/>

[3]

Examiner Only	
Marks	Remark
Total Question 7	



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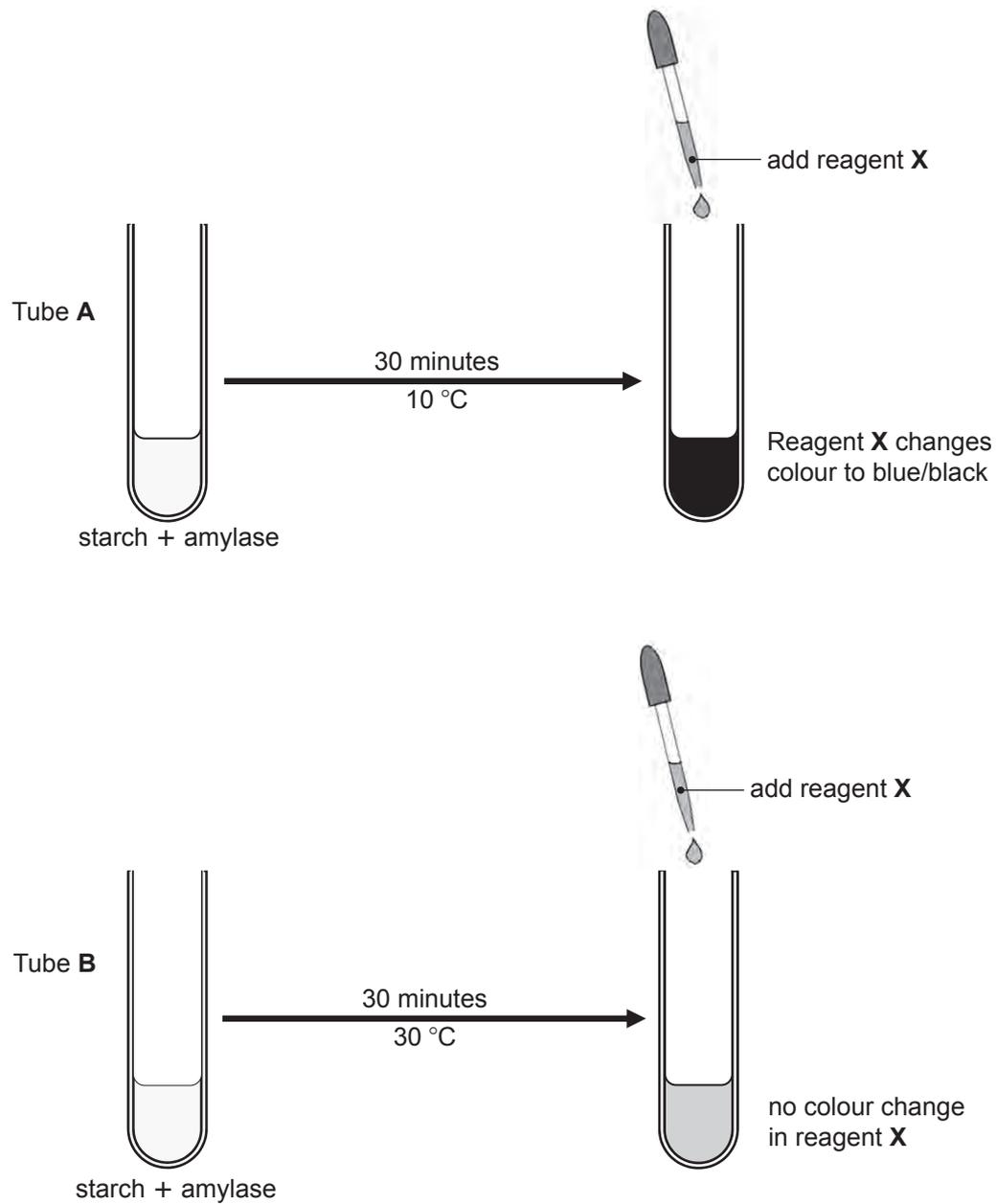
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28GBY1115

8 The diagram shows an experiment on the action of the enzyme amylase.



Look at the diagram.

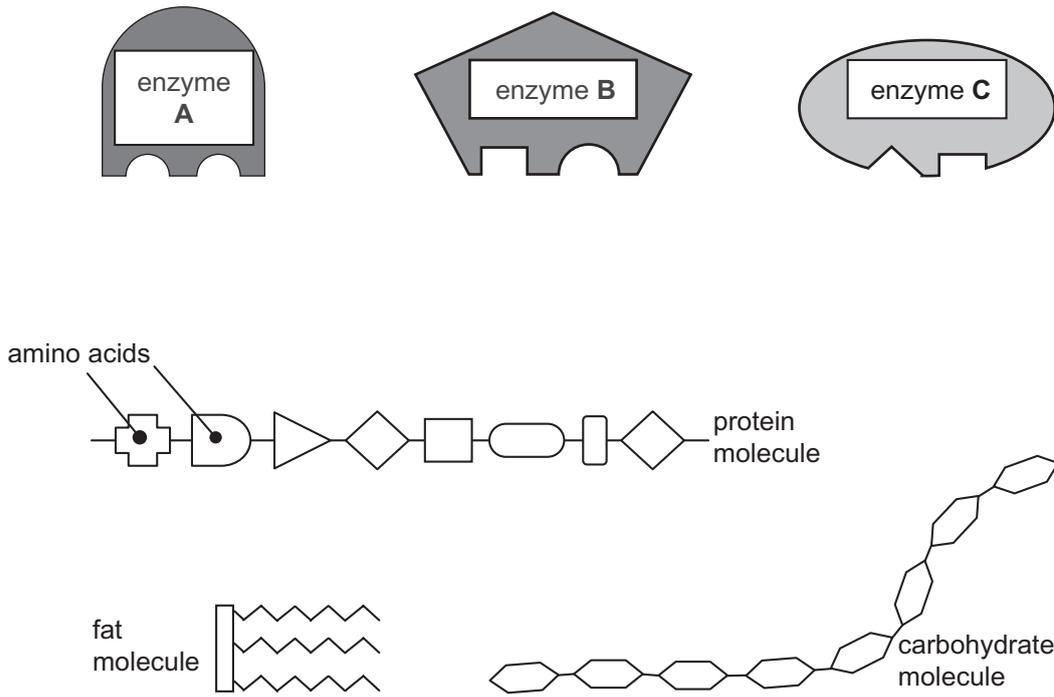
(a) Name reagent X.

[1]

Examiner Only	
Marks	Remark



The diagram shows enzymes and food molecules.

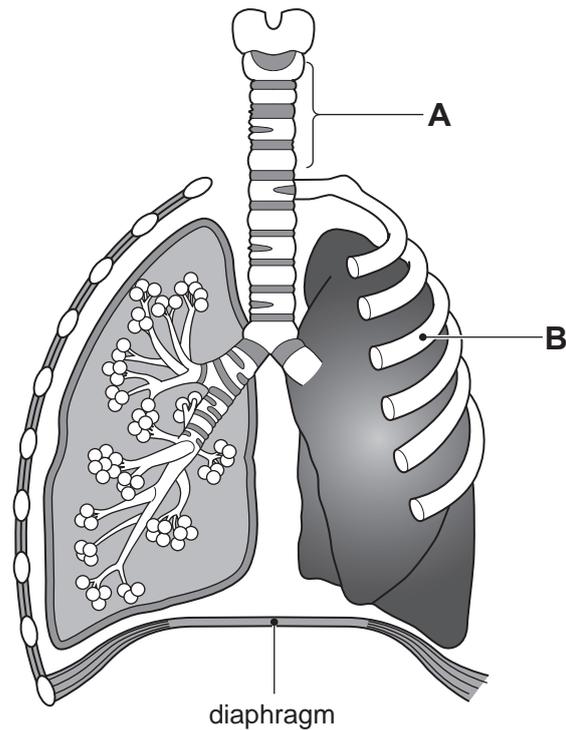


Examiner Only

Marks Remark



9 The diagram shows part of the respiratory system.



© OCR Gateway GCSE Biology by S Broadley, S Hocking, M Matthews,
published by Oxford University Press, ISBN 978 0199135684

Look at the diagram.

(a) Name parts A and B.

A _____ [1]

B _____ [1]

The diaphragm changes when you breathe in and out.

(b) Describe these changes.

Breathe in _____

Breathe out _____

_____ [2]

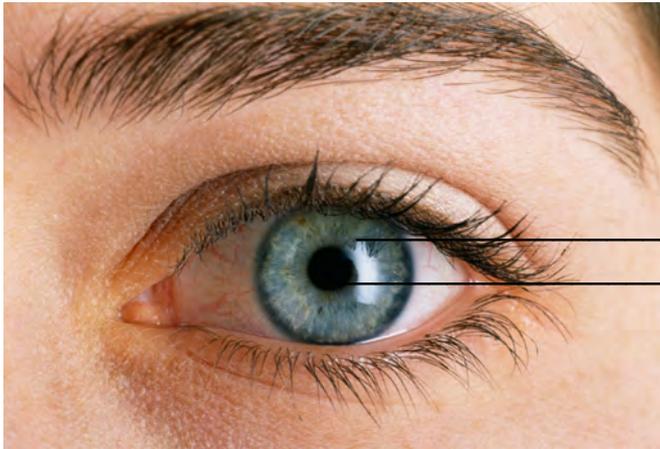
Examiner Only

Marks Remark

Total Question 9



10 The photograph shows the front of a human eye in bright light.



© Jupiterimages/Photos.com/ Thinkstock

Examiner Only	
Marks	Remark

Look at the photograph.

(a) Name parts **A** and **B**.

A _____ [1]

B _____ [1]

(b) The bright light is switched off.

(i) Describe what happens to **part B**.

_____ [1]

(ii) Explain why this change in **B** is necessary.

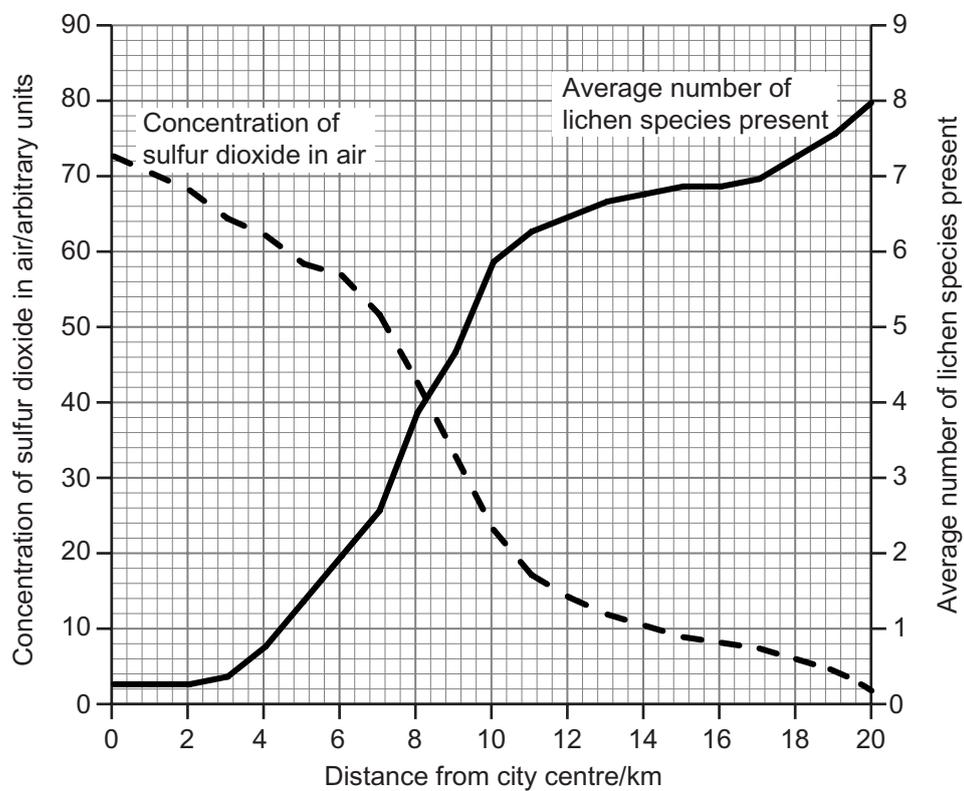
 _____ [2]

Total Question 10

[Turn over



- 11 The graph shows the concentration of sulfur dioxide in the air and the average number of lichen species present on trees at different distances from a city centre.



Look at the graph.

- (a) The concentration of sulfur dioxide in the air changes as you move away from the city centre.

Describe the change.

_____ [1]

Examiner Only	
Marks	Remark



- 12 The table shows the loss of vitamin C content of four types of salad leaves stored for 10 days after picking.

Type of salad leaf	Vitamin C content per 100 g of salad leaves/mg		Percentage loss of vitamin C
	Day 0	Day 10	
Green lettuce	0.10	0.09	
Wild rocket	72.97	3.55	95.10
Lamb's lettuce	59.18	13.61	77.00
Red lettuce	0.07	0.07	0.00

Look at the table.

- (a) Calculate the percentage loss of vitamin C content in green lettuce.

Show your working.

Write your answer in the table.

[2]

- (b) Use data from the table to explain which type of salad leaf is most suitable for use after storing for 10 days.

[2]

Examiner Only

Marks

Remark



- (c) A bag of fresh mixed salad leaves has a vitamin C content of 20 mg per 100 g.

A portion of fresh salad leaves weighs 60g.

- (i) Calculate the mass of vitamin C in a 60g portion of fresh mixed salad leaves.

Show your working.

Mass _____ mg [1]

An adult is advised to have a daily intake of 50 mg of vitamin C.

- (ii) What percentage of their daily vitamin C is provided by this portion of fresh mixed salad leaves?

Show your working.

Percentage _____ [1]

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Marks	Remark

Total Question 12	

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28GBY1126





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Question Number	Marks
1	
2	
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11	
12	

Total Marks	
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Examiner Number

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