



General Certificate of Secondary Education
2011

Science: Biology

Paper 2
Foundation Tier

[G0902]

THURSDAY 2 JUNE, MORNING

StudentBounty.com

71

Candidate Number



G0902

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

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

Write your answers in the spaces provided in this question paper.

Answer **all six** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 120.

Quality of written communication will be assessed in question **5(b)(ii)**.

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

Details of calculations should be shown.

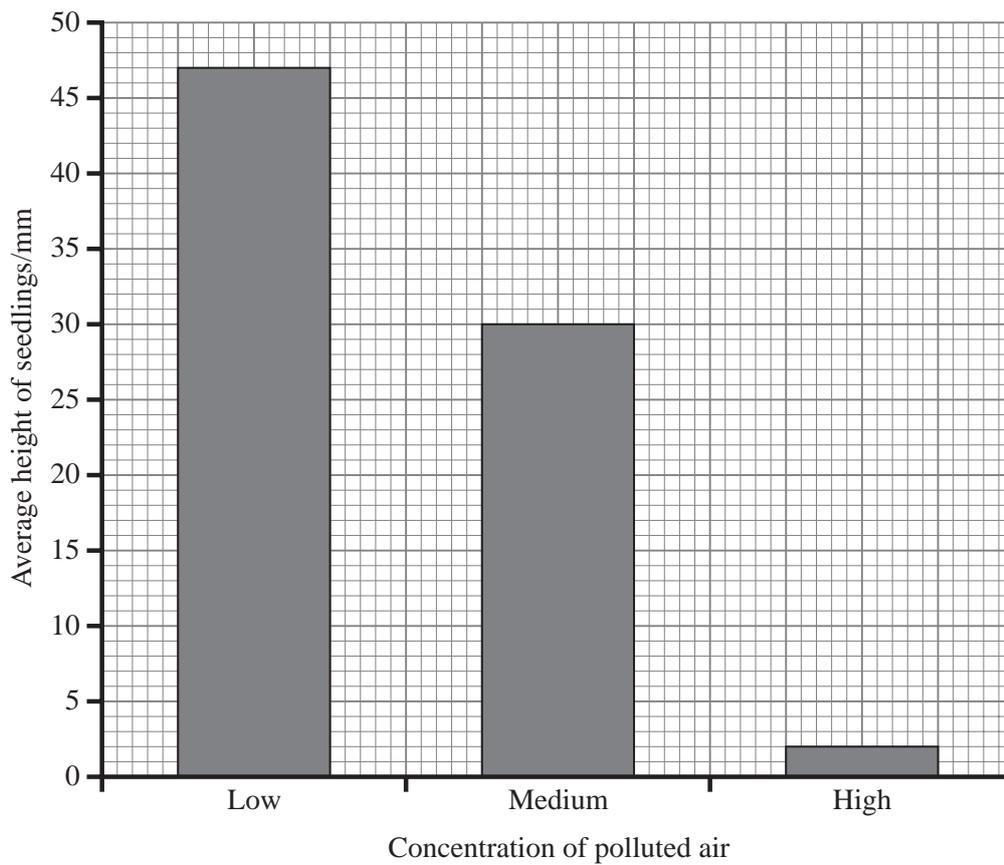
Units must be stated in numerical answers where appropriate.



6298

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
Total Marks	

(b) The graph shows the average height of seedlings grown in different concentrations of polluted air.



(i) Give the average height of seedlings grown in the medium concentration of polluted air.

_____ mm [1]

(ii) How does increasing the concentration of polluted air affect the average height of seedlings?

 _____ [1]

(iii) Suggest **two** ways air pollution can be reduced.

 _____ [2]

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Marks	Remark

(d) The photographs show a grey and a red squirrel.

Grey Squirrel

Red Squirrel



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There are now more of the larger grey squirrels (height 25–30 cm) in Ireland than the smaller red squirrels (height 19–23 cm). The red squirrels are hard to find as they spend a lot of their time in trees. At a weight of 300g red squirrels are half the weight of grey squirrels. Red squirrels also have large tufted ears and a longer bushy tail compared to the short and rounded tail of grey squirrels.

(i) Use the photographs and the passage to help complete the table comparing grey and red squirrels.

Feature	Grey Squirrel	Red Squirrel	
Height/cm			[1]
Weight/g			[2]
Tail			[1]

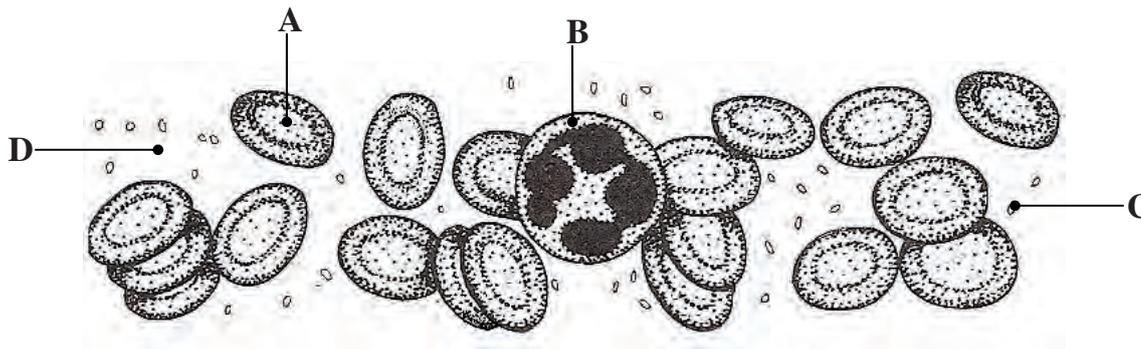
(ii) Suggest **one** reason why grey squirrels now outnumber red squirrels.

[1]

Examiner Only	
Marks	Remark

2 The diagram shows a sample of blood.

Examiner Only	
Marks	Remark



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(a) (i) Name the parts A, B and C.

A _____ [1]

B _____ [1]

C _____ [1]

(ii) Use the diagram to find the ratio of cell type A to cell type B.

_____ [1]

Cell A contains haemoglobin.

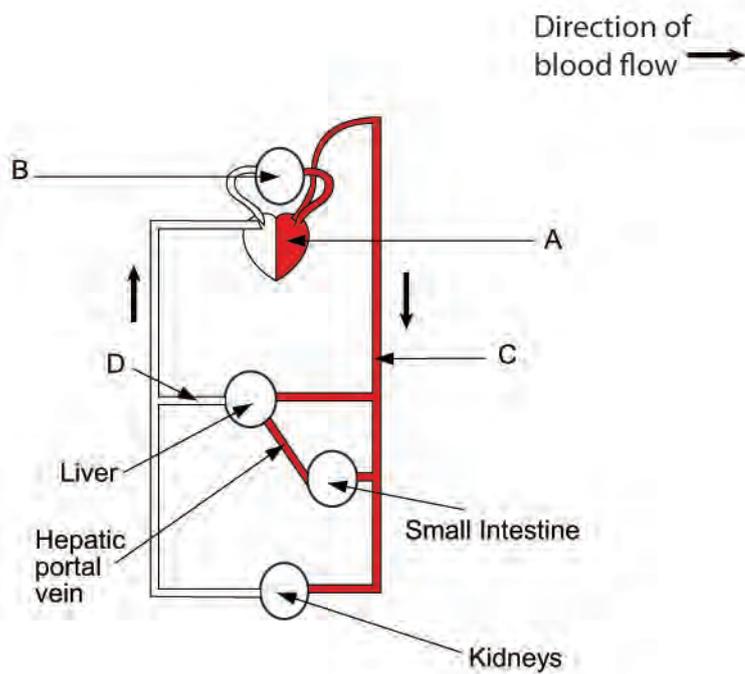
(iii) What is the function of haemoglobin?

 _____ [1]

(iv) Give **two other** differences, shown in the diagram, between cells A and B.

 _____ [2]

The diagram shows part of the circulatory system.



© CCEA

(b) (i) Name organs A and B, artery C and vein D.

Organ A _____ [1]

Organ B _____ [1]

Artery C _____ [1]

Vein D _____ [1]

(ii) Draw an arrow on the hepatic portal vein to show the direction of blood flow. [1]

Examiner Only	
Marks	Remark

(c) Complete the table of blood vessels.

Type of blood vessel	Thickness of wall	Valves present	Speed of blood flow
Artery		No	
Vein	Thin		
Capillary	1 cell thick		Very slow

[5]

Examiner Only	
Marks	Remark

(iii) Suggest why the seed must have a tough outer coat.

[1]

(iv) Complete the table.

Example	Type of dispersal
<p data-bbox="268 562 352 595">Apple</p>  <p data-bbox="424 819 659 842">© iStockphoto / Thinkstock</p>	<p data-bbox="927 689 1031 723">Animal</p>
<p data-bbox="268 864 491 898">Creeping thistle</p>  <p data-bbox="411 1120 646 1142">© iStockphoto / Thinkstock</p>	
<p data-bbox="268 1167 347 1200">Vetch</p>  <p data-bbox="400 1417 603 1440">© Hemera / Thinkstock</p>	
<p data-bbox="268 1469 387 1503">Burdock</p>  <p data-bbox="395 1727 630 1749">© iStockphoto / Thinkstock</p>	

[1]

[1]

[1]

Examiner Only	
Marks	Remark

(c) The apple was tested to find out whether it contained starch or sugars in the food store.

(i) Name the reagent used to test for starch.

_____ [1]

(ii) Describe how you would test the apple for sugars.

_____ [2]

The table shows the colour of the reagent at the start and after testing with the apple.

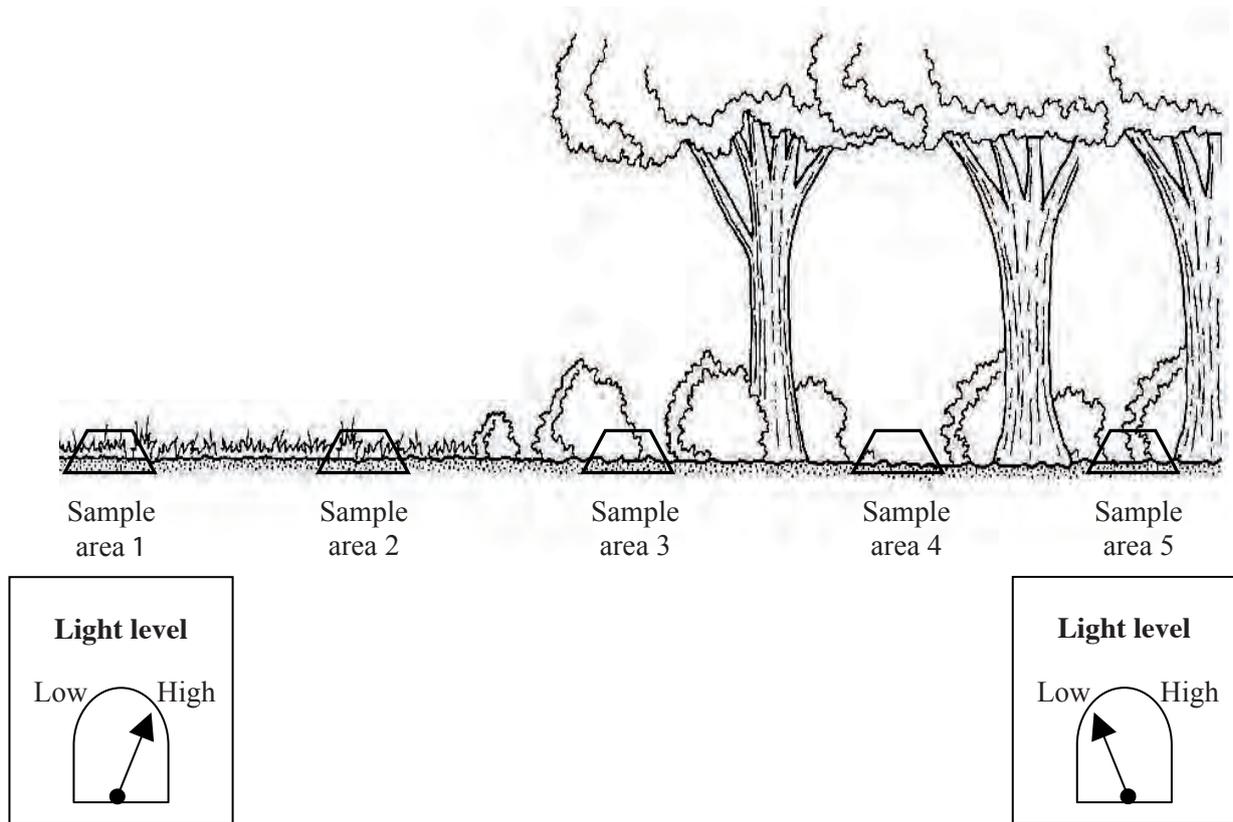
Test for	Colour of reagent	
	start	end
Starch	Yellow/brown	Yellow/brown
Sugar	Blue	Brick red

(iii) Explain what these results show.

_____ [2]

Examiner Only	
Marks	Remark

- 4 (a) The diagram shows where light measurements and samples were taken in a habitat study.



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The table shows the number of plant species in each sample area.

Sample area	1	2	3	4	5
Number of plant species	12	11	7	4	3

- (i) Suggest why the number of plant species decreases from sample area 1 to sample area 5.

_____ [1]

Examiner Only	
Marks	Remark

(b) The diagram shows a sample of the animals collected during the habitat study.



A – © iStockphoto / Thinkstock
 B – © iStockphoto / Thinkstock
 C – © Brand X Pictures / Thinkstock
 D – © iStockphoto / Thinkstock E – © Hemera / Thinkstock

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Marks	Remark

(i) Give the letters of the animals which are insects.

_____ [1]

(ii) Give **two** features of insects **not visible** in the diagram.

1. _____ [1]

2. _____ [1]

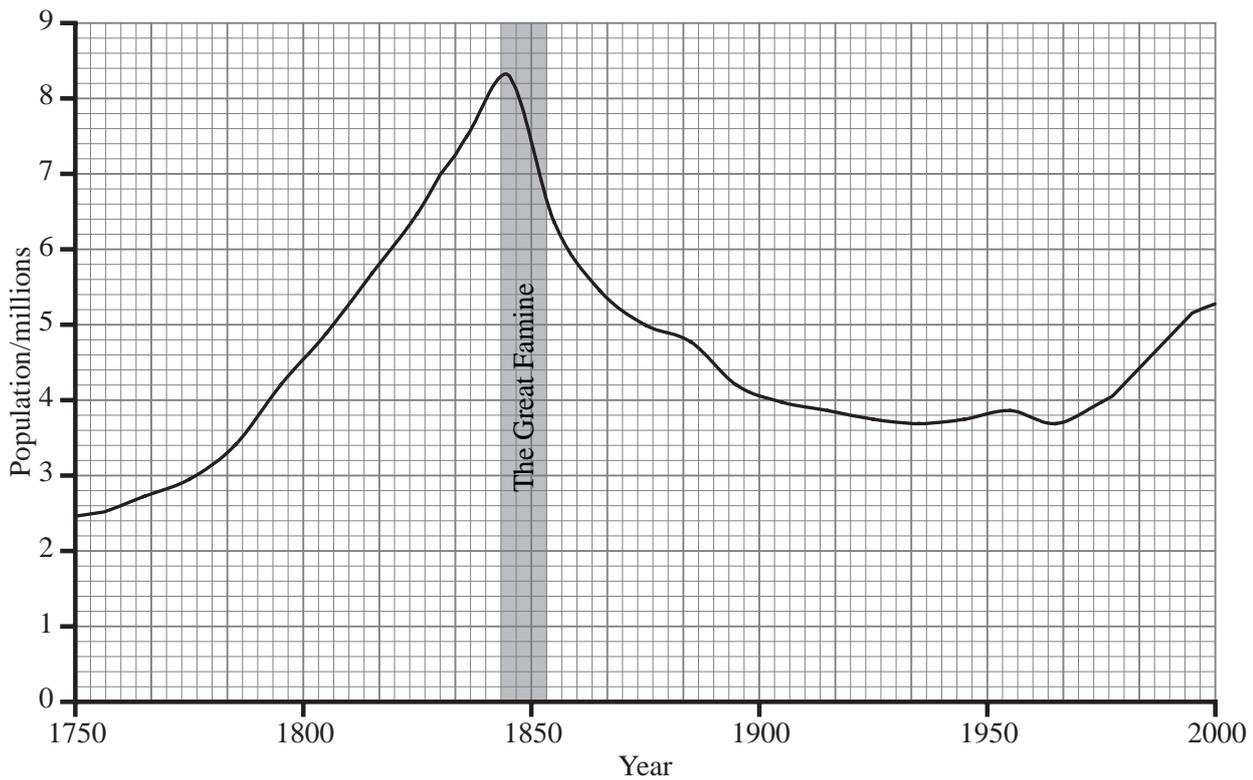
(iii) To which group do insects belong?

_____ [1]

(iv) Give **one** feature **visible** in the diagram, which adapts all of these animals for life on land.

_____ [1]

(c) The graph shows changes in the population of Ireland between 1750 and 2000.



© Dr Wesley Johnston

(i) Explain, in terms of birth rate and death rate, the population change during the Great Famine.

_____ [2]

After the Great Famine, the population decreased mainly due to emigration.

(ii) What is emigration?

_____ [1]

(iii) Suggest **two** reasons why the population started to increase after 1960.

1. _____ [1]

2. _____ [1]

Examiner Only	
Marks	Remark

[Turn over

Examiner Only	
Marks	Remark

6 (a) Complete the table on cell structure by placing a ✓ or an ✗ in the boxes.

✓ = present ✗ = absent

Cell structure	Plant cell	Animal cell
Cell wall	✓	
Cytoplasm		
Chloroplast		
Vacuole		✗

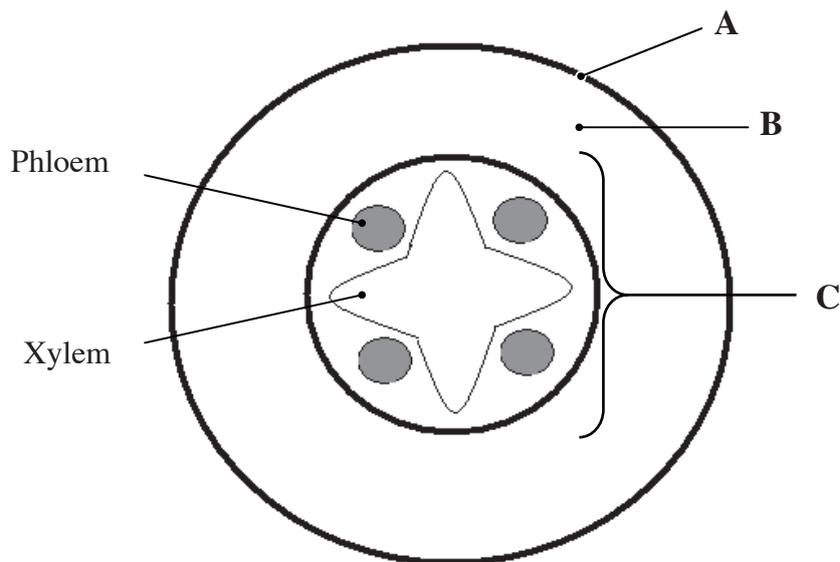
[1]

[1]

[1]

[1]

(b) The diagram shows a section through a plant root.



(i) Name parts A, B and C.

A _____

[1]

B _____

[1]

C _____

[1]

(vi) Draw cell X enlarged three times.

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Marks	Remark

[3]

(vii) Name cell W and describe how it is adapted for its function.

[3]

THIS IS THE END OF THE QUESTION PAPER

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