

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GCSE  
B683/01**

**ENVIRONMENTAL AND  
LAND-BASED SCIENCE**

**Commercial Horticulture, Agriculture and  
Livestock Husbandry (Foundation Tier)**

**WEDNESDAY 21 JUNE 2017: Morning**

**DURATION: 1 hour**

**plus your additional time allowance**

**MODIFIED ENLARGED 24pt**

<b>Candidate forename</b>						<b>Candidate surname</b>				
<b>Centre number</b>						<b>Candidate number</b>				

**Candidates answer on the Question Paper.**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**Pencil**

**Ruler (cm/mm)**

**Calculator**

**READ INSTRUCTIONS OVERLEAF**



## **INSTRUCTIONS TO CANDIDATES**

**Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**

**Use black ink. HB pencil may be used for graphs and diagrams only.**

**Answer ALL the questions.**

**Read each question carefully. Make sure you know what you have to do before starting your answer.**

**Write your answer to each question in the space provided. If additional space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.**

## **INFORMATION FOR CANDIDATES**

**The quality of written communication is assessed in questions marked with a pencil (.**

**The number of marks is given in brackets [ ] at the end of each question or part question.**

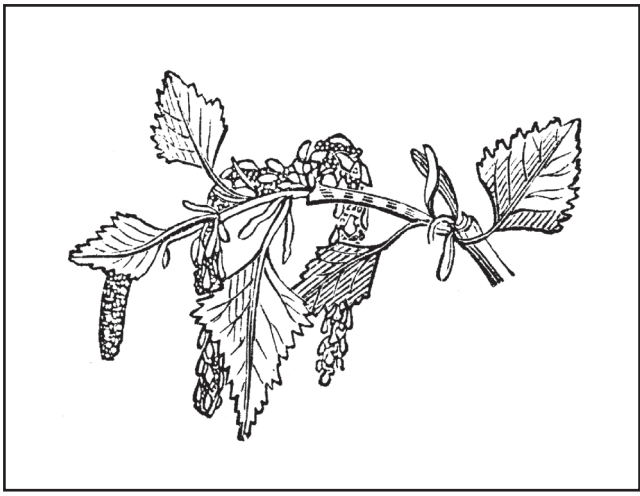
**The total number of marks for this paper is 50.**

**BLANK PAGE**

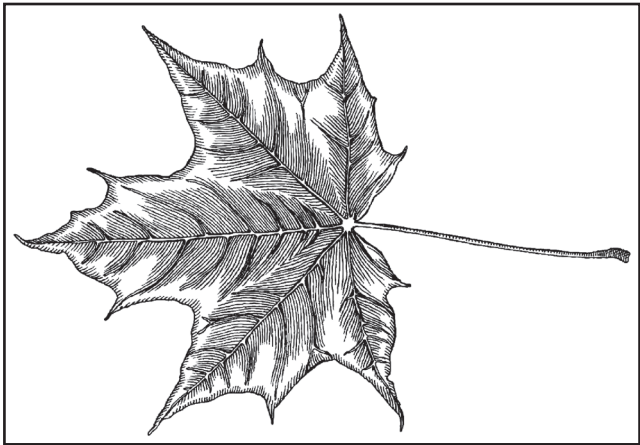
**Answer ALL the questions.**

- 1 (a) The diagrams opposite show trees used in parks, gardens and street plantings.**

**Draw a straight line to connect the tree leaf to its correct name. [3]**



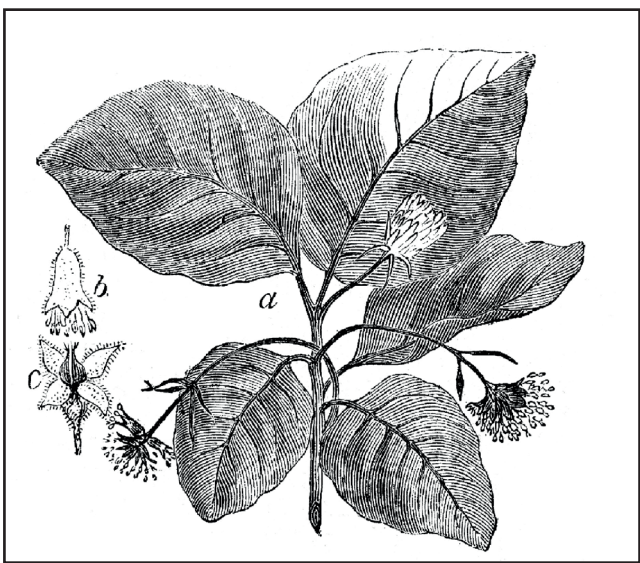
**Acer**



**Birch**



**Cherry**



**Beech**

**(b) Describe how these and other trees you have studied can be used to provide interest at different times of the year.**



**The quality of written communication will be assessed in your answer to the question.**

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[6]

**(c) State TWO tasks that might be needed to keep these trees healthy for many years.**

1 \_\_\_\_\_

2 \_\_\_\_\_

[2]

**[TOTAL: 11]**

2 (a) There are many reasons why a plant may be unhealthy.

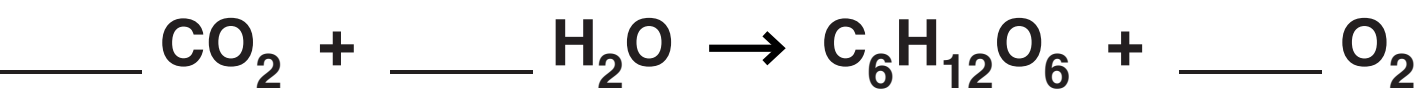
Here is a list of some of them:

Lack of -            LIGHT            NUTRIENTS            WATER

Use the list to match each symptom with its likely cause. [2]

Symptom	Cause
Plant is wilting	
Plant growth is yellow and stunted	
Plant growth is yellow and long	

(b) Balance the following equation for photosynthesis. [1]



[TOTAL: 3]

**3 The photographs show three types of lawnmower.**

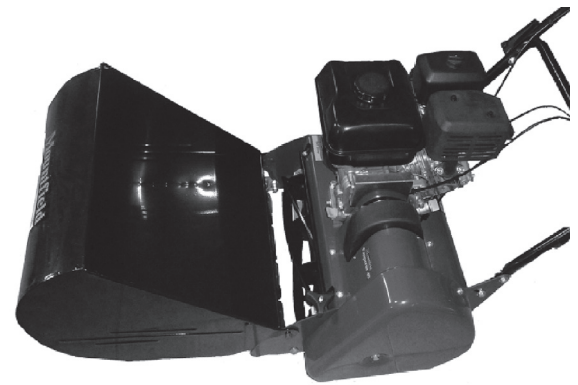
**A**



**B**



**C**



**(a) Write the correct letter for each mower in the spaces provided.**

**(i) Which TWO of the mowers are rotary mowers?**

\_\_\_\_\_ and \_\_\_\_\_ **[1]**

**(ii) Which ONE of the mowers is a hover mower?**

\_\_\_\_\_ **[1]**

**(iii) Which of the mowers is most suitable for cutting fine grass such as a bowling green?**

\_\_\_\_\_ **[1]**



**(b) Suggest ONE advantage and ONE disadvantage of a petrol lawnmower over an electric lawnmower.**

**Advantage**

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**Disadvantage**

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**[2]**

**[TOTAL: 5]**

4 (a) Growers use a range of methods of protected cultivation.

These include: glasshouses,  
polytunnels,  
cloches  
fleece.

Explain how AND why growers use each of these.



The quality of written communication will be assessed in your answer to the question.

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[6]

(b) The table shows the costs of treating whitefly in a glasshouse using biological and non-biological methods.

		Biological methods	Non-biological methods
Treatment material costs	Per pot	95p	7p
	Per m <sup>2</sup> of pots	£5.70	42p
Labour costs	Per pot	12p	15p
	Per m <sup>2</sup> of pots	72p	90p
Total costs	Per pot	£1.07	22p
	Per m <sup>2</sup> of pots	£6.42	

(i) Using the information in the table calculate the total cost of treating a square metre of whitefly using NON-BIOLOGICAL METHODS.

\_\_\_\_\_ [1]

(ii) How many pots per m<sup>2</sup> were in the glasshouse?

\_\_\_\_\_ pots [1]

**(iii) Use the information in the table to compare the relative costs of both methods of treating whitefly.**

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[2]

**(iv) What other information would you need before deciding which was the best method to control the whitefly?**

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[2]

**[TOTAL: 12]**

5 (a) Deficiencies in certain vitamins and minerals in an animal’s diet can lead to ill health.

Fill in the gaps in the table to match the vitamin or mineral with the problem caused by its deficiency in the diet.

The first has been done for you. [4]

Vitamin or Mineral	Deficiency Problem
Vitamin A	Poor eye sight
Vitamin	Scurvy
Vitamin D	
Mineral	Anaemia
Mineral Calcium	

(b) What is meant by a ‘balanced diet’?

[TOTAL: 6]

- 6 Use the correct terms below to fill in the blanks in this description of mating.

**OVARY**

**OVIDUCT**

**TESTES**

**SPERM DUCT**

**UTERUS**

Sperm produced in the \_\_\_\_\_ travels down the \_\_\_\_\_ and is released inside the female.

In the female, eggs produced in the \_\_\_\_\_ travel down the \_\_\_\_\_ towards the \_\_\_\_\_ where they meet the sperm. [3]

**[TOTAL: 3]**

7 (a) Many farmers regularly weigh their animals.

For a farm animal you have studied, describe how to safely weigh that animal and explain why it is important to know an animal’s weight.



The quality of written communication will be assessed in your answer to the question.

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[6]

**(b) The graph opposite shows the results of an investigation to find how the daily gain in mass of a beef animal changes as its body mass increases.**

**(i) Use the graph to describe how the animal's daily gain in mass changes as its body mass increases.**

**Use figures from the graph in your explanation.**

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**[2]**

**(ii) What is the maximum average daily gain in mass?**

\_\_\_\_\_ kg/day **[1]**

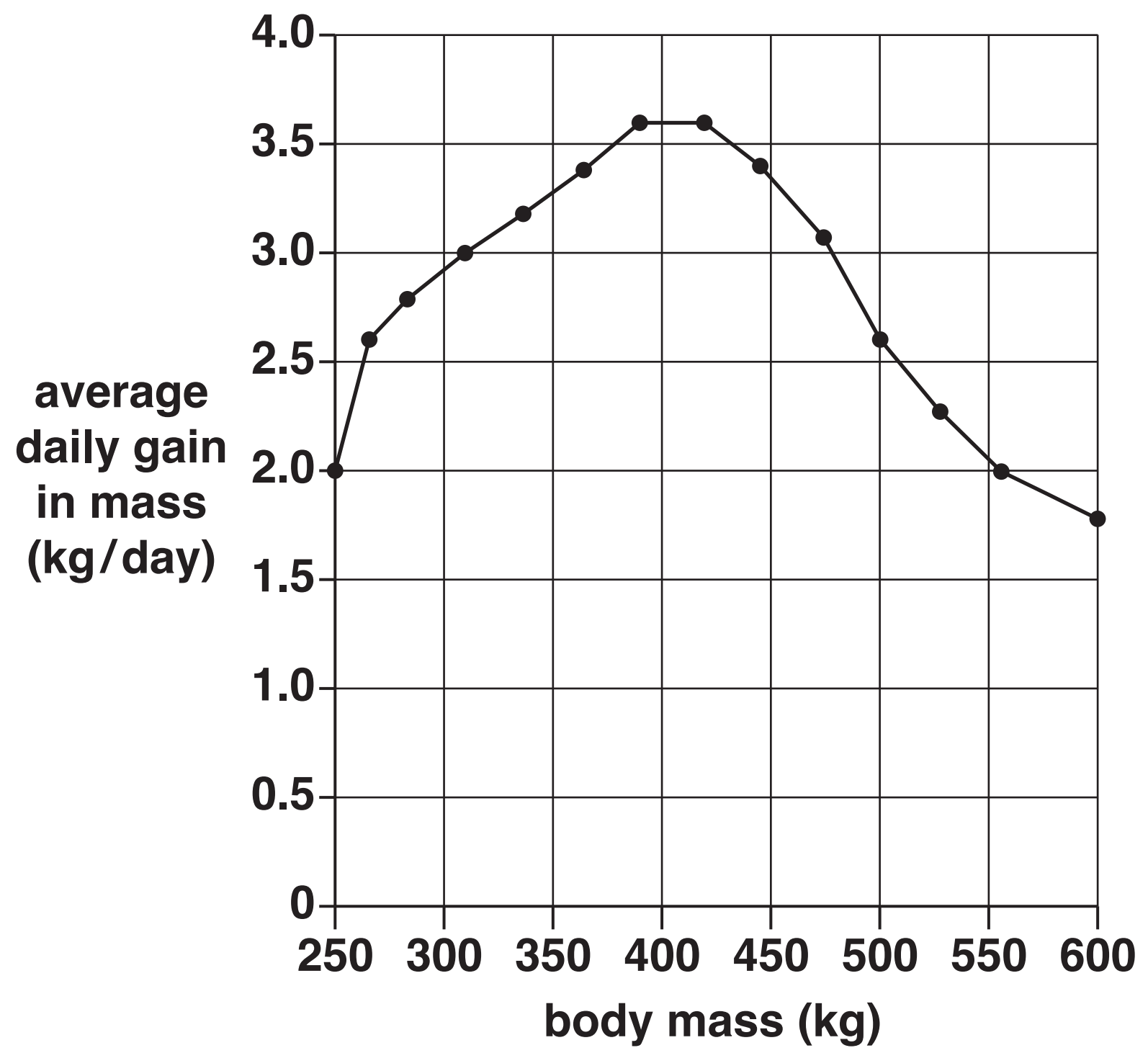
**(iii) How much did the animal increase in mass over the time period of the investigation?**

\_\_\_\_\_ kg **[1]**

**[TOTAL: 10]**

**END OF QUESTION PAPER**





## ADDITIONAL ANSWER SPACE

**If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).**

[illegible]



