

Wednesday 21 June 2017 – Morning

GCSE ENVIRONMENTAL AND LAND-BASED SCIENCE

B683/01 Commercial Horticulture, Agriculture and Livestock Husbandry
(Foundation Tier)

Candidates answer on the Question Paper.

OCR supplied materials:

None

Other materials required:

- Pencil
- Ruler (cm/mm)
- Calculator

Duration: 1 hour



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. 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.
- Do **not** write in the barcodes.

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**.
- This document consists of **12** pages. Any blank pages are indicated.

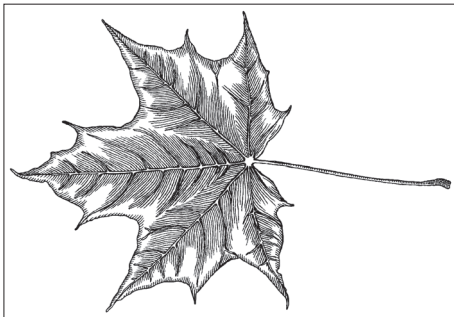
Answer **all** the questions.

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

Draw a straight line to connect the tree leaf to its correct name.



Acer



Birch



Cherry



Beech

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

Here is a list of some of them:

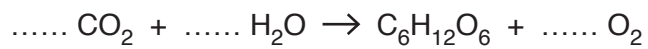
Lack of - **light** **nutrients** **water**

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

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

[2]

- (b) Balance the following equation for photosynthesis.



[1]

[Total: 3]

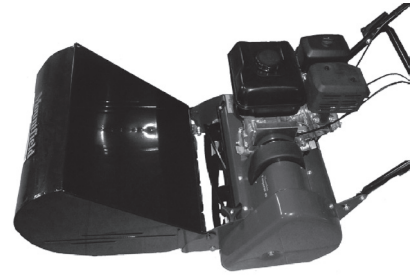
3 The photographs show three types of lawnmower.



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

.....
.....

Disadvantage

.....
.....

[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 ² of pots	£5.70	42p
Labour costs	Per pot	12p	15p
	Per m ² of pots	72p	90p
Total costs	Per pot	£1.07	22p
	Per m ² 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 m² were in the glasshouse?

..... pots [1]

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

.....

 [2]

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

.....

 [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.

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

[4]

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

.....

.....

.....

..... [2]

[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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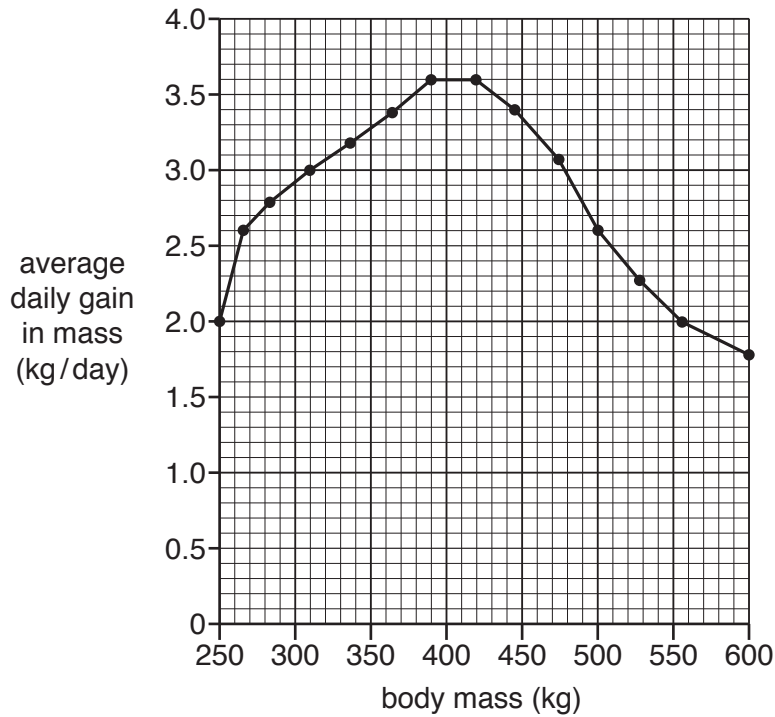
.....

.....

.....

..... [6]

- (b) The graph 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.

.....

.....

.....

..... [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).

A large area of lined paper for writing. It consists of a vertical solid line on the left side, creating a margin. To the right of this line, there are numerous horizontal dotted lines spaced evenly down the page, providing a guide for writing.

A large area of the page is reserved for writing, featuring a vertical solid line on the left side and horizontal dotted lines extending across the page.



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