

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE

B683/01

**ENVIRONMENTAL AND
LAND-BASED SCIENCE**

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

THURSDAY 19 JUNE 2014: Afternoon

DURATION: 1 hour
plus your additional time allowance

MODIFIED ENLARGED

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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Candidates answer on the Question Paper.
A calculator may be used for this paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Pencil

Ruler (cm/mm)

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. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).

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.

Any blank pages are indicated.

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Answer ALL the questions.

1 The photographs show four trees used in parks and gardens.

A



B



C



D



Draw a straight line from the NAME of each tree to the letter representing its PHOTOGRAPH.

NAME	PHOTOGRAPH
Acer	A
Beech	B
Birch	C
Cherry	D

[3]

[TOTAL: 3]

2 Tomato plants can be grown in a glasshouse.

(a) Healthy plants need light.

Why do plants need light?

_____ **[1]**

(b) Name TWO other things plants need for healthy growth.

_____ **[2]**

(c) Give ONE way the grower could:

increase the amount of light the tomato plants receive in the glasshouse

reduce light levels if it is too bright.

Increase light levels _____

Reduce light levels _____ **[2]**

[TOTAL: 5]

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TURN OVER FOR QUESTION 3

3 The photographs show four different types of mower.



A



B



C



D

Mowers can be described in many different ways.

Use TWO labels from the list below to describe each type of mower.

Each label can be used more than once.

SIDE-WHEEL

HOVER

CYLINDER

ROTARY

PETROL

ELECTRIC

Mower A _____ and _____ .

Mower B _____ and _____ .

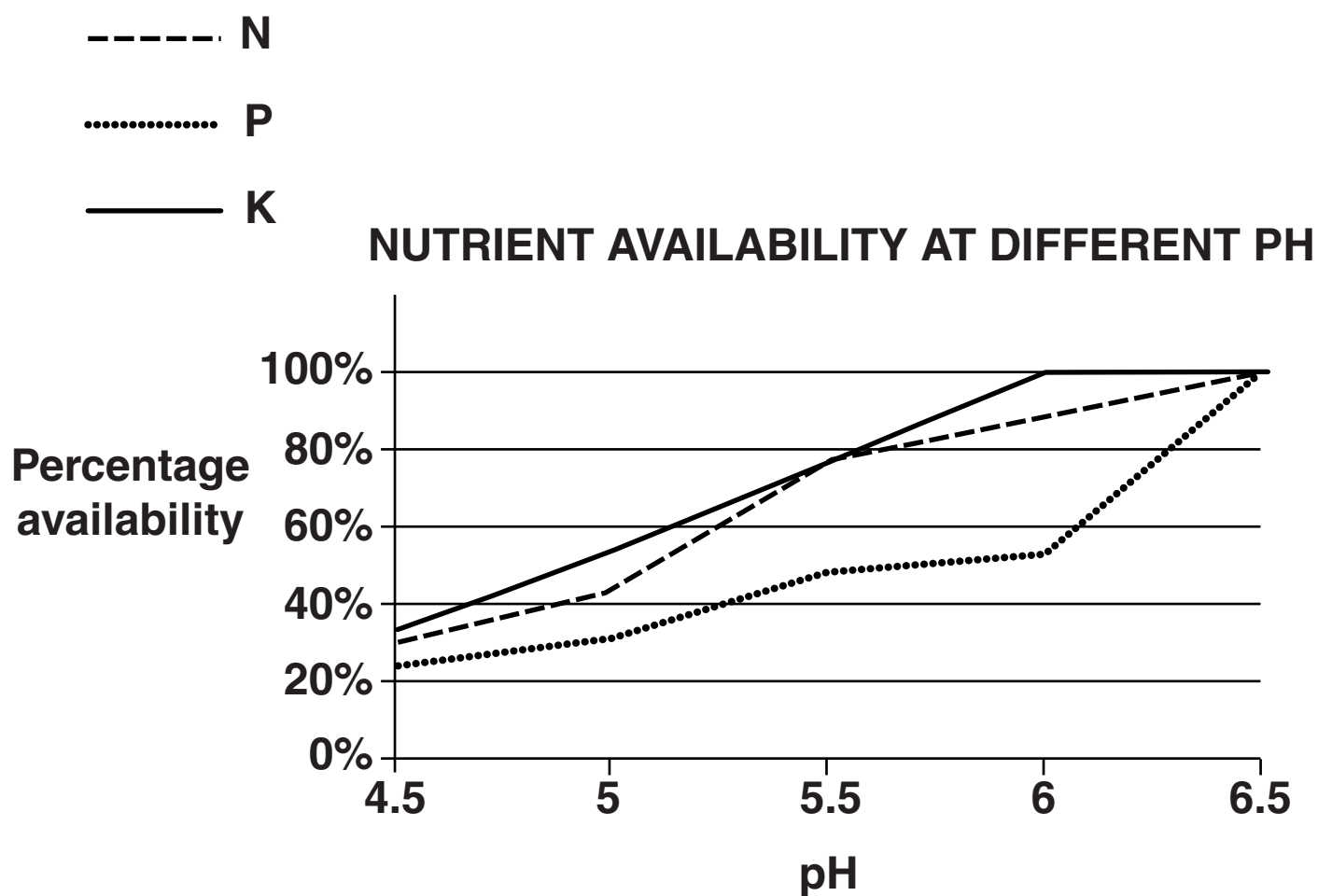
Mower C _____ and _____ .

Mower D _____ and _____ .

[4]

[TOTAL: 4]

- 4 The graph shows the percentage of different nutrients that are available to plants at different pH values.



Which nutrient is least available at low pH values?

Answer _____ [1]

[TOTAL: 1]

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TURN OVER FOR QUESTION 5

- 5 A market gardener wants to grow some cabbages in a field.**

The soil has a low pH.

At low pH, cabbages cannot take in enough nitrates from the soil to grow properly.

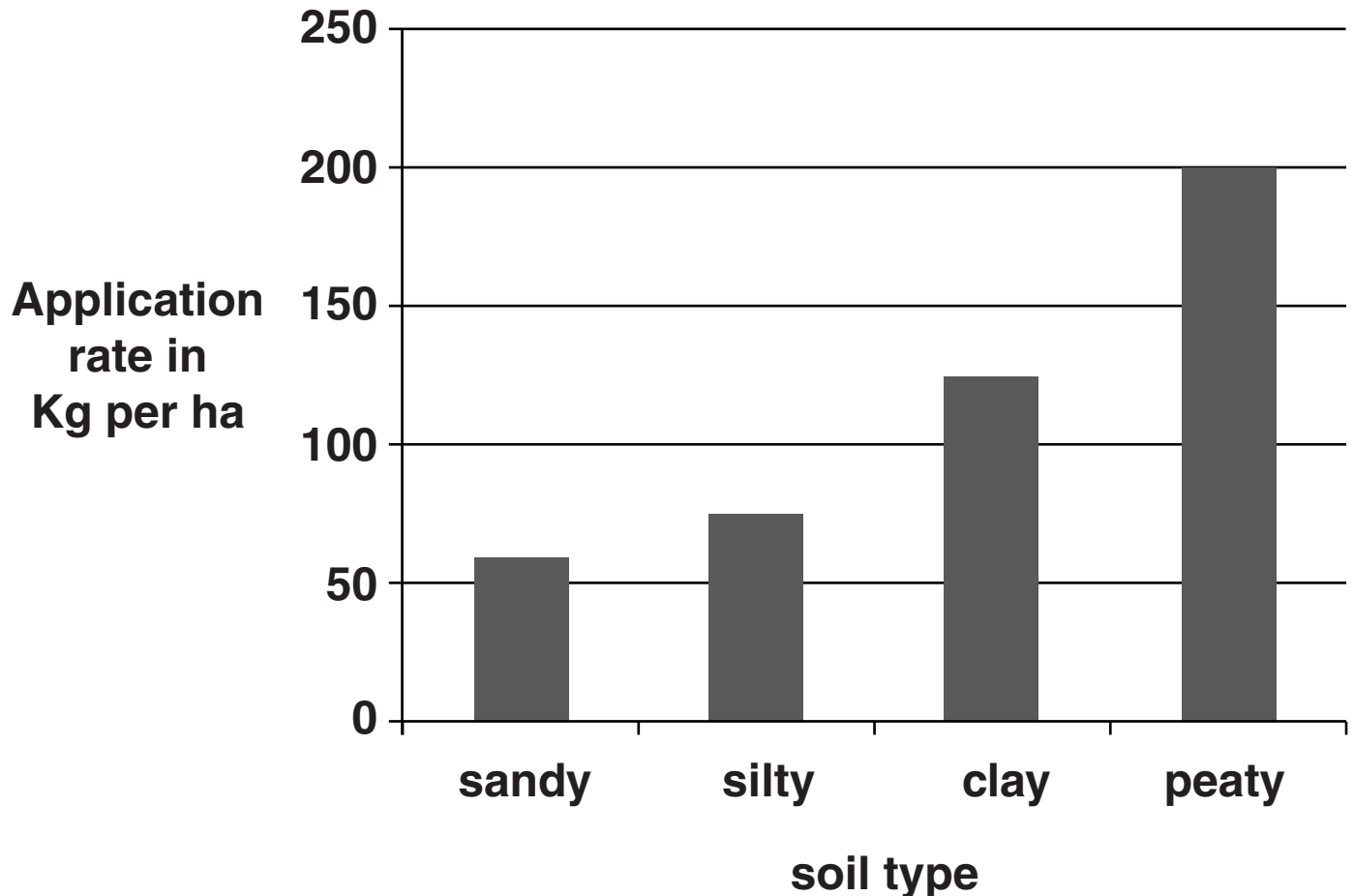
She decides to add lime to correct the soil pH.

The table shows how much lime is needed to correct the pH of her soil by 0.1.

Soil type	Application rate in Kg per ha
Sandy	60
Silty	100
Clay	125
Peaty	200

- (a) The graph shows the same information but with ONE error.

Correct the graph by extending the incorrect bar to its correct height. [1]



- (b) The cabbage field is 120m by 80m.

The gardener needs to raise the pH of her clay soil from pH 7.9 to pH 8.0.

How much lime does she need?

Answer _____ Kg [2]

6 Ornamental onions (Alliums) can be grown in a pot.

(a) Describe the ADVANTAGES and DISADVANTAGES of growing plants in a pot rather than in open soil.

[4]

(b) What type of compost would you recommend for this pot?

Give a reason for your answer.

Compost _____

Reason _____

[1]

[TOTAL: 5]

7 Keeping healthy animals is the main purpose of good animal husbandry.

For a farm animal you have studied, explain how you would tell if the animal was healthy or unhealthy.



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

[6]

[TOTAL: 6]

8 Aphids are pests of many plants.

- (a) A female aphid produces 160 offspring in a two-week period and then dies.**

If all these offspring reproduce at the same rate and no aphids die, how many would there be after a further two weeks?

Answer _____ [1]

- (b) When considering pest control methods, the figure in your answer to part (a) could be used to argue for either biological or chemical pest control.**

Give ONE reason for choosing each type of pest control.

I would choose biological pest control because

I would choose chemical pest control because

[2]

9 Students are moving a pig into another pen.

It is important that the students do this safely.

Explain the stages in moving an animal, such as a pig, safely.

Make sure you put the stages in the correct order.



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

[6]

[TOTAL: 6]

10 This question is about feed supplements.

Feed supplements are used to ensure an animal has a balanced diet.

(a) A high energy feed supplement has the following label on showing the feeding rate.

FEEDING GUIDELINES:

**1 Tub will last
50 ewes approx 4
weeks.**

The tubs cost £18 each.

What will it cost a farmer to feed a flock of 250 ewes for 12 weeks?

Answer £_____ [2]

(b) The table shows a range of different mineral supplements given to ewes.

Typical Analysis			
	Extra high energy	Standard	Super Sup
Energy in megajoules per kg	16	11	12
Sugar	30%	27%	33%
Protein	12%	3%	12%
Oil	14%	6%	6%
Calcium	2%	3%	4%
Magnesium	0.25%	0.3%	5%
Vitamin A	22.5 mg/kg	18.0 mg/kg	30.0 mg/kg
Vitamin D	0.375 mg/kg	0.3 mg/kg	0.5 mg/kg
Vitamin E	150 mg/kg	150 mg/kg	350 mg/kg

Which of these supplements would you give to ewes in late pregnancy and lactation?

Explain why this feed supplement is most suitable to help the ewe and her developing lamb.

Feed supplement _____

Explanation _____

_____ [3]

[TOTAL: 5]

11 A farmer sees that one of the cows is:

restless

mooing a lot

mounted by another cow.

Explain what these signs show.

Why is it important for the farmer to make a note of the date this happens?

[3]

[TOTAL: 3]

12 The milk yield from a herd of cows is below average.

Suggest methods that the farmer could use to improve the milk yield of this herd.

Explain how these methods would improve milk yield.



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

[6]

[TOTAL: 6]

END OF QUESTION PAPER

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