F

OCR
RECOGNISING ACHIEVEMENT

Friday 25 January 2013 – Afternoon

GCSE ENVIRONMENTAL AND LAND-BASED SCIENCE

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

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)

Duration: 1 hour

Candidate forename		Candidate surname	

Centre number						Candidate number					

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. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
* Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

* Your 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 **16** pages. Any blank pages are indicated.

Turn over

Answer **all** the questions.

1   A grower wants to produce a number of hanging baskets.

The photographs show five plants used in tubs and baskets.

A

B

C

D

E

(a) Match the correct name of each plant to its photograph.

begonia ☐

fuchsia ☐

lobelia ☐

marigold ☐

pelargonium (geranium) ☐

[4]

(b) The grower needs to produce 25 **small** baskets and 75 **large** baskets.

   (i) Each small basket contains one fuchsia plant and each large basket contains three fuchsia plants.

How many fuchsia plants are needed?

number of plants .... **[1]**

   (ii) The fuchsia plants are grown in trays of 50 plants. The cost of each tray is £37.50.

What will be the total cost of all the fuchsia plants needed for these baskets?

£ .... **[1]**

2 Plant production involves several stages.

Place the following tasks in the order they would be carried out in plant production.

| planting out | potting on | pricking out | sowing |

1 ....

2 ....

3 ....

4 ....

[3]

3 To remain healthy, all animals need a balanced diet.

Explain the importance of carbohydrate, fat, fibre and protein in a balanced diet.

....

....

....

....

....

.... **[4]**

4 **Annual** plants and **perennial** plants have different life cycles.

Describe **two** differences between the life cycle of an annual plant and a perennial plant.

1 ....

....

2 ....

....
[2]

5 The Belgian Blue is a modern beef breed.

This breed was developed from a chance mutation.

This mutation produced an animal with 'double muscle'.

Describe how this single animal could have been bred to develop the Belgian Blue animal.

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

....

....

....

....

....

....

....

....

....

.... **[6]**

6 The photographs show four different types of mower.

A

B

C

D

(a) Which of these mowers is **not** a rotary mower?

Answer **A**, **B**, **C** or **D** .... **[1]**
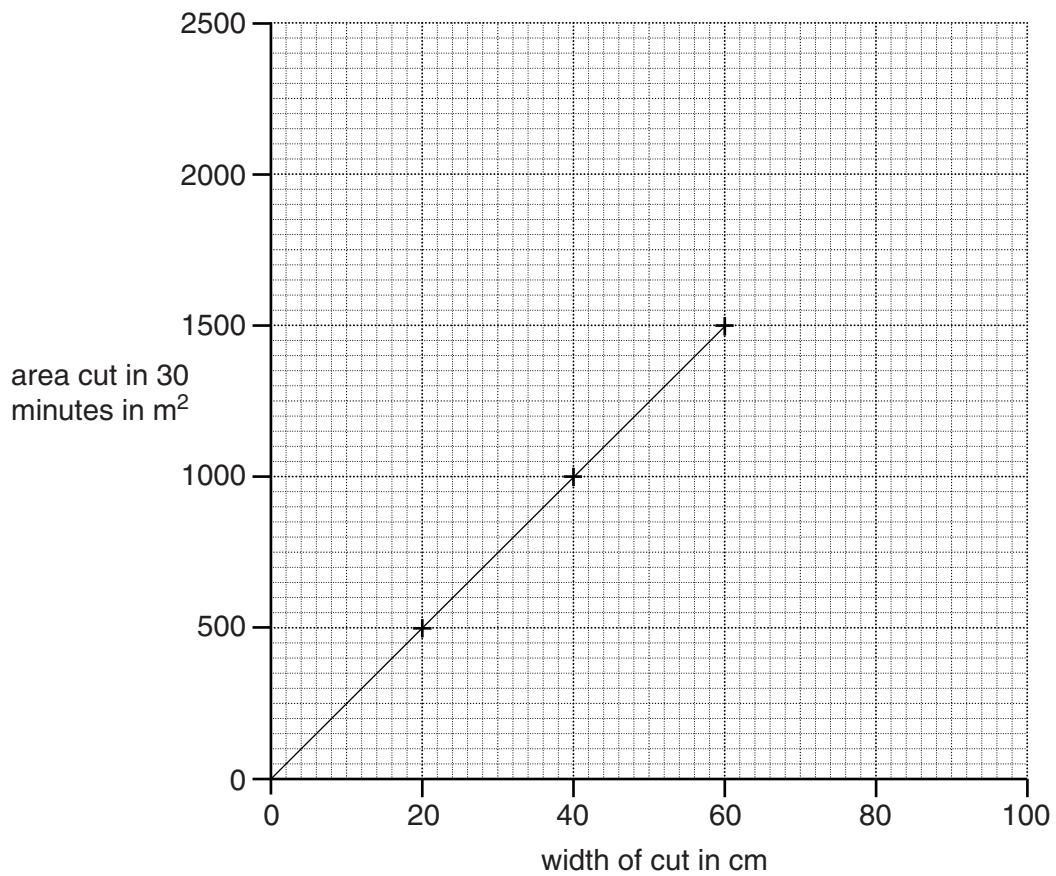
(b) The picture shows a garden lawn mower.

The width of the cut is 30 cm.

Other lawn mowers have a different width of cut.

The graph shows the area of grass cut in 30 minutes by different sized mowers.

A gardener needs to cut an area of 2000 m² in 30 minutes.
Use the graph to estimate the width of cut needed.

.... cm **[1]**

7 A new lawn can be produced from **seed** or **turf**.

Explain the stages of producing a new lawn from **turf**.

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

....

....

....

....

....

....

....

....

....

.... **[6]**
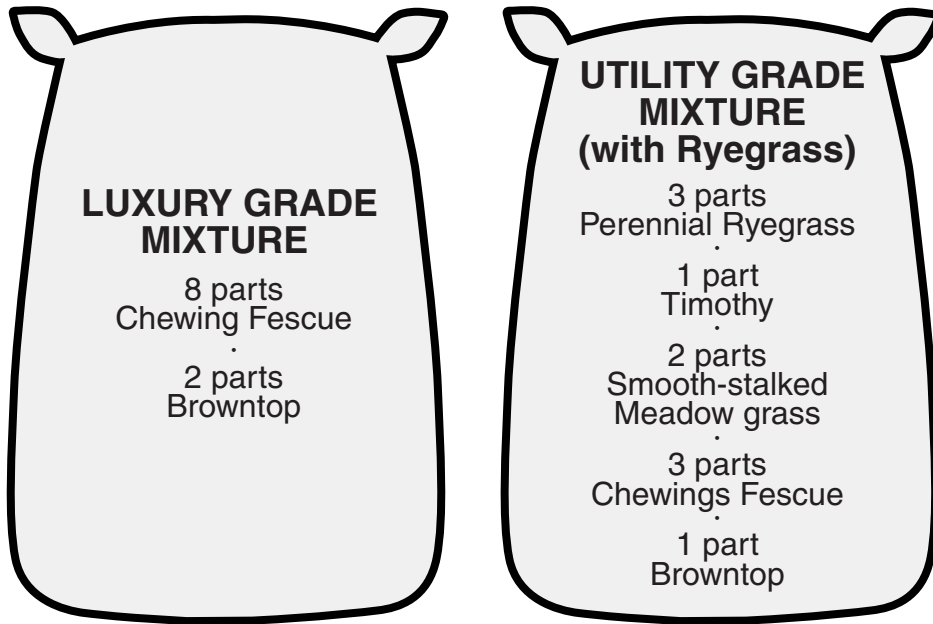
Turn over

8   There are a number of different varieties of grass seed.

Commercial sellers mix these varieties together.

The mixture depends on what the finished lawn is going to be used for.

Two typical mixtures are shown below.

Typical Blends

LUXURY GRADE MIXTURE

8 parts
Chewing Fescue
.
2 parts
Browntop

UTILITY GRADE MIXTURE (with Ryegrass)

3 parts
Perennial Ryegrass
.
1 part
Timothy
.
2 parts
Smooth-stalked
Meadow grass
.
3 parts
Chewings Fescue
.
1 part
Browntop

Grass seed needs to be sown at 40 g/m^2.

(a) How much grass seed would need to be purchased to produce a lawn of 2000 m^2?

.... **[1]**

(b) If you were making up your own Utility Grade Mixture, how much perennial ryegrass would you need to produce a lawn of 2000 m^2?

Answer .... g **[1]**

9 This herd is being brought in for milking.

The farmer sees a cow standing still while being mounted by one of the other cows.

Suggest what management task the farmer might carry out following this observation.

.... **[1]**

10 The photograph shows a farmer milking a cow.

Many farmers do not allow strangers to come into the milking parlour.

Having strangers present during milking can reduce milk production.

Explain why.

....

....

....

.... **[2]**

11 An important task on the farm is to move an animal from one area of the farm to another.

Choose an animal you have studied.

Write a set of instructions to help a new farm student to move **this animal** safely.

animal ....

....

....

....

....

....

.... **[4]**

Turn over

12 The photograph shows an orphan lamb being fed.

(a) The correct feeding of young animals is an important aspect of good livestock husbandry.

Choose a young ruminant animal you have studied.

Describe and explain the changing diet needed by an orphaned animal from birth to weaning.

animal ....

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

....

....

....

....

....

....

....

....

....

.... **[6]**

(b) An orphan lamb needs to be bottle-fed.

The lamb drinks a milk replacement food.

The table shows the amounts of milk replacement food needed during the first three weeks.

Feeding period	Feeding frequency	Amount per feed in cm³	Amount per day in cm³	Total for the period in cm³
Day 1–2	every 4 hours	140	840	1 680
Day 3–7	every 6 hours	200	....	4 000
Day 8–14	every 8 hours	500	1500	10 500
Day 15–21	every 8 hours	700	2100	....

  (i) Calculate and fill in the missing amounts in the table. **[1]**

 (ii) Calculate how much milk is given to the lamb from day 1 to day 21.

Answer .... cm³ **[1]**

(iii) It takes 200 g of milk powder to make 1000 cm³ of milk replacement.

What mass of milk powder is needed to bottle feed the lamb from day 1 to day 21?

Answer .... g **[1]**

 (iv) A 1 kg of milk powder costs £2.50.

How much will it cost to feed an orphan lamb from day 1 to day 21?

Answer £ .... **[1]**

  (v) A farmer makes about £20 profit on a naturally reared lamb sold at market.

Many farmers try to avoid bottle rearing orphan lambs.

Use the information in the table and your calculations to suggest why.

....

....

.... **[2]**

END OF QUESTION PAPER

PLEASE DO NOT WRITE ON THIS PAGE