

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE

B681/01

**ENVIRONMENTAL AND LAND-BASED
SCIENCE**

**Management of the Natural
Environment (Foundation Tier)**

THURSDAY 12 JUNE 2014: Morning

**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.

BLANK PAGE

Answer ALL the questions.

1 Farmers need to control weeds in their fields.

Which TWO of the following are reasons for controlling weeds?

Put ticks (✓) in the boxes next to the TWO correct reasons.

To reduce air pollution.

To reduce competition for nutrients.

To reduce competition for water.

To reduce soil compaction.

To reduce soil temperature.

[2]

[TOTAL: 2]

2 Glasshouses are used to grow pot plants for sale.

Which TWO of the following are reasons for growing pot plants in a glasshouse?

Put ticks (✓) in the boxes next to the TWO correct reasons.

Glass attracts extra sunlight.

Less energy is used to grow the plants.

Plant growth is more rapid than outside.

The environment can be closely managed.

The plants will not be attacked by pests.

[2]

[TOTAL: 2]

3 Ann has started a herb nursery.

She grows her herbs using ORGANIC methods.

Which one of these is essential for ORGANIC growing?

- A She must use natural methods for pest control.**
- B She must not give the herbs any fertilisers.**
- C The herbs must always be grown in a glasshouse.**
- D The herbs must be sold with a special label on them.**

Answer A, B, C or D _____ [1]

[TOTAL: 1]

4 Soil is made up of different components:

clay

gravel

sand

silt

Put these soil components in order according to their size.

Soil component	Size
	Smallest ↓ Largest

[2]

[TOTAL: 2]

5 Which one of the following is the definition of BIODIVERSITY?

- A Animals that have been raised organically.**
- B Organisms that are genetically modified.**
- C The places living organisms can live.**
- D The variety of different species living in a habitat.**

Answer A, B, C or D _____ [1]

[TOTAL: 1]

6 Rabbits were first introduced to the UK by the Romans.

Rabbits are now very common in the countryside.

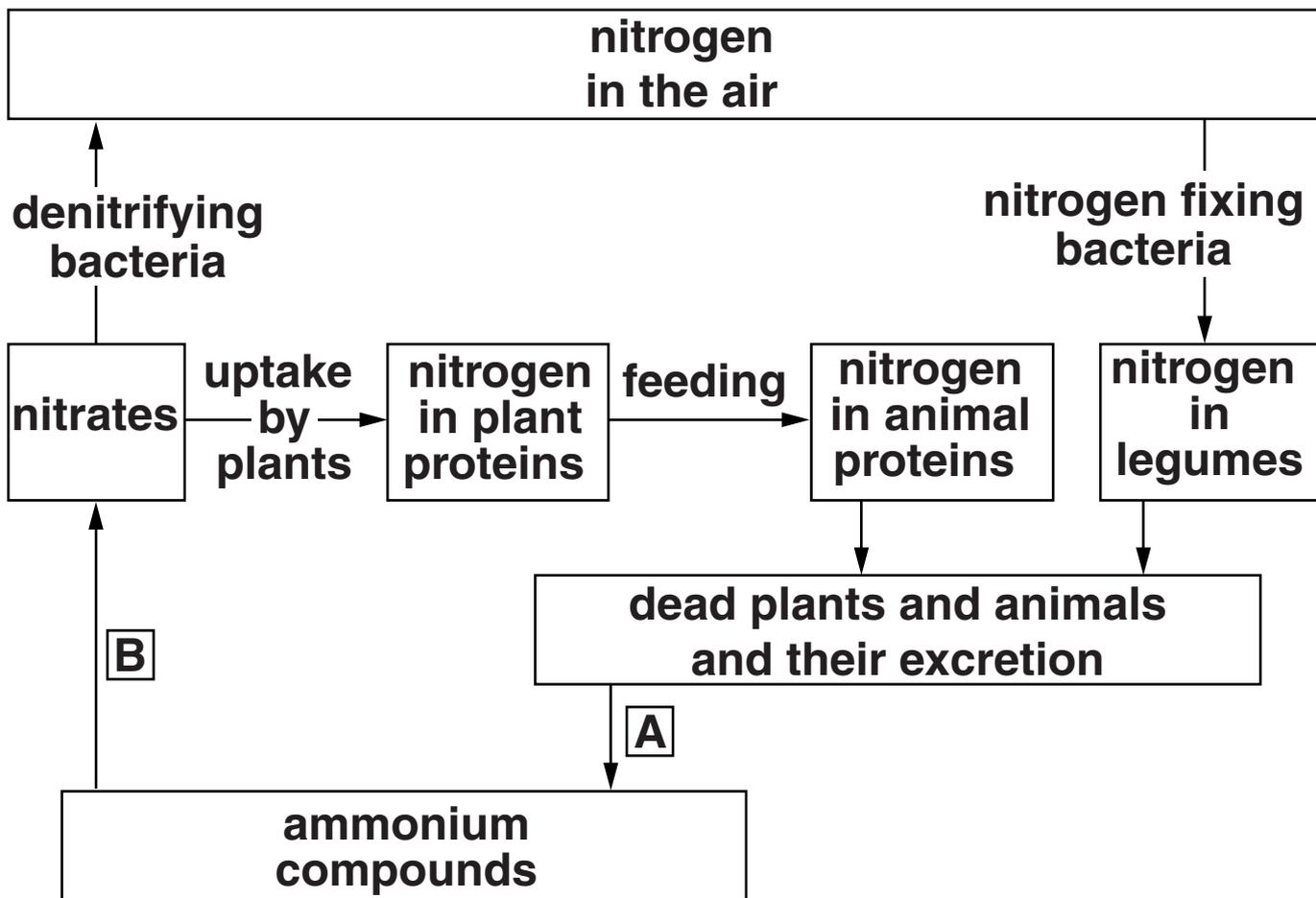
Rabbits have adapted well to living in the UK.

Suggest FOUR of these adaptations.

[4]

[TOTAL: 4]

7 The diagram shows part of the nitrogen cycle.



(a) The process at point A is

- decay
- fixation
- nitrification
- respiration

Tick (✓) one box only.

[1]

(b) The process at point B is

decay

fixation

nitrification

respiration

Tick (✓) one box only.

[1]

[TOTAL: 2]

8 A food web shows the feeding relationships between plants and animals in a habitat.

A food web will show PRODUCERS and CONSUMERS.

Which one of the following in a food web is a PRODUCER?

A bird

B cow

C farm manager

D fox

E wheat

Answer A, B, C, D or E _____ [1]

[TOTAL: 1]

9 Moving livestock from one field to another can be a hazard.

Suggest TWO hazards of moving sheep into another field.

_____ **[2]**

[TOTAL: 2]

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11 (a) A school has kept weather records over many years.

This includes measuring the amount of rainfall every day.

Suggest ONE reason why measuring the amount of rainfall is useful to the people who care for the plants in the school grounds.

[1]

- (b) The school monitors the air temperature in the grounds.**

The graph opposite shows the maximum and minimum air temperatures recorded each day in March 2012.

- (i) On which date was the HIGHEST temperature recorded?**

Answer _____ [1]

- (ii) Which date has the greatest temperature RANGE?**

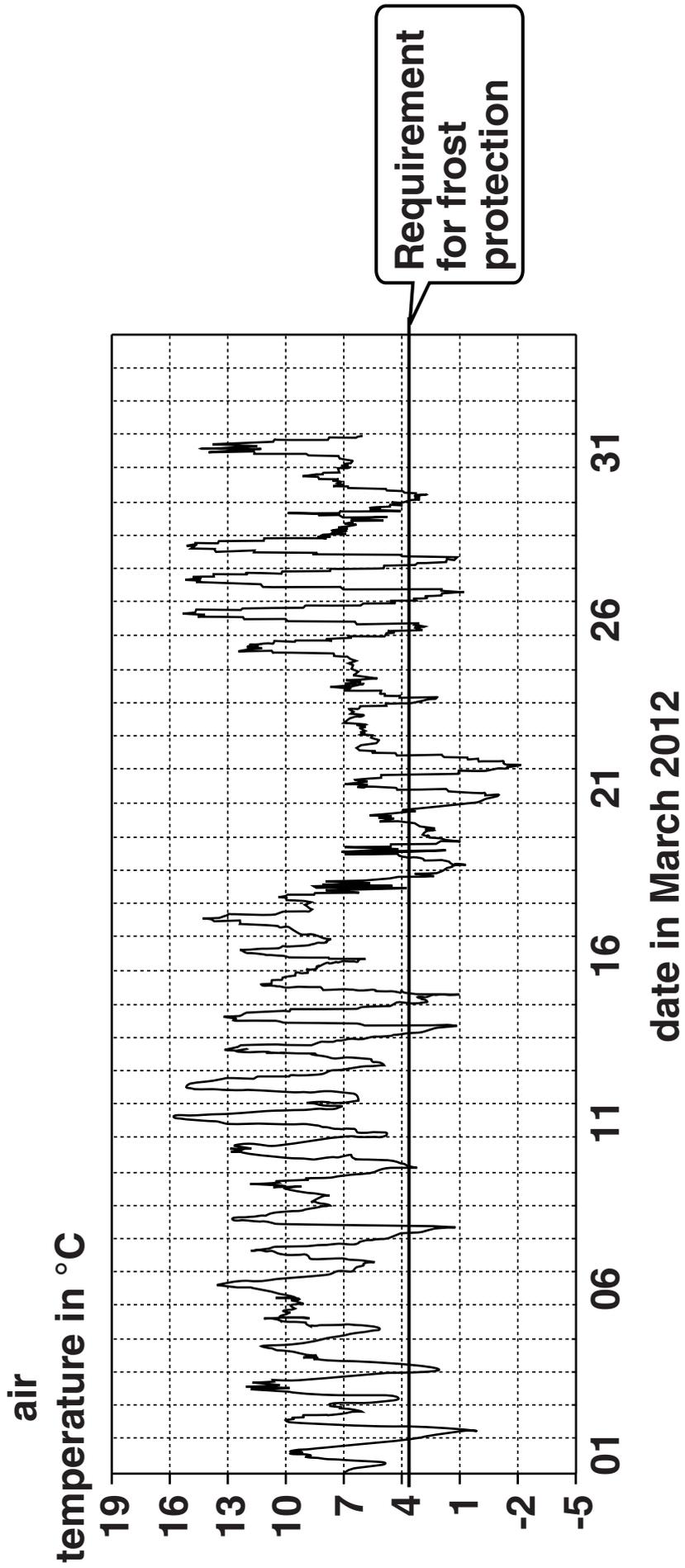
Answer _____ [1]

- (iii) State how the MEAN temperature could be calculated for any one day.**

_____ [1]

- (iv) How many days was frost protection needed in March 2012?**

Answer _____ [1]



(v) How might the recording of air temperature help the school decide when to plant out frost-tender plants?

_____ [1]

(c) Over many years the school has monitored:

the air temperature

rainfall

sunlight levels.

This information can then be used to help the school grow plants.

Suggest TWO other weather conditions that the school could use ICT to monitor.

_____ [2]

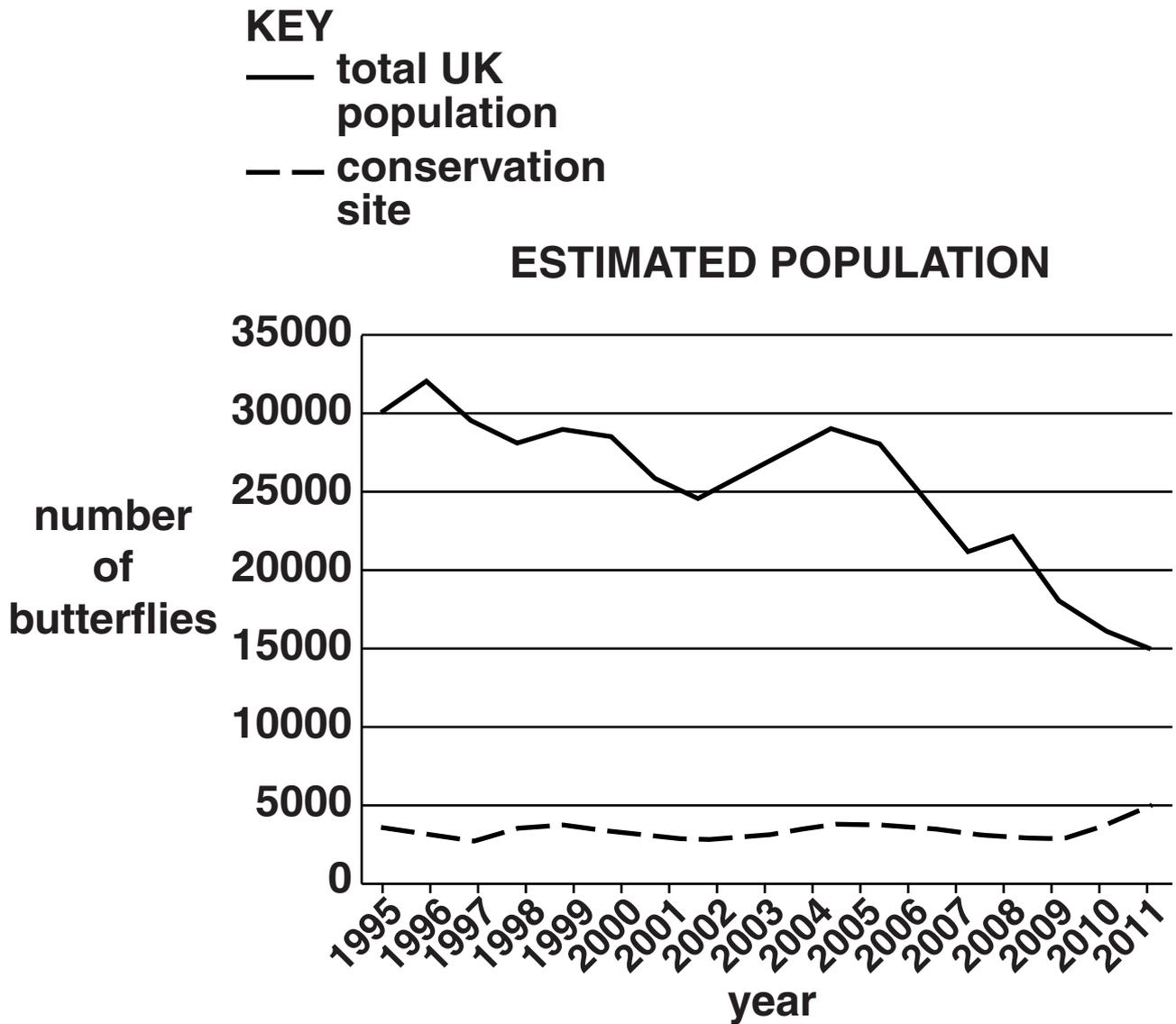
[TOTAL: 8]

13 Some species of butterfly are endangered.

For one butterfly species the graph shows:

the total UK population

the numbers at one conservation site.



(a) Describe the overall trends between 1995 and 2011.

[2]

(b) Suggest reasons for the trends shown on the graph.

[2]

(c) (i) In 2011, what percentage of the UK population of the species was located at this conservation site?

Answer _____ % [1]

(ii) Why might this be a problem?

[1]

(d) A butterfly charity wants to help protect this species.

Use the data to suggest how the charity might do this.

[1]

[TOTAL: 7]



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