

**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**

|                               |  |                              |  |
|-------------------------------|--|------------------------------|--|
| <b>Candidate<br/>forename</b> |  | <b>Candidate<br/>surname</b> |  |
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|--------------------------|--|--|--|--|--|-----------------------------|--|--|--|--|
| <b>Centre<br/>number</b> |  |  |  |  |  | <b>Candidate<br/>number</b> |  |  |  |  |
|--------------------------|--|--|--|--|--|-----------------------------|--|--|--|--|

**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.**

| <b>Soil component</b> | <b>Size</b>                            |
|-----------------------|--|
|                       | <b>Smallest</b><br>↓<br><b>Largest</b> |
|                       |  |
|                       |  |
|                       |  |

**[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.**

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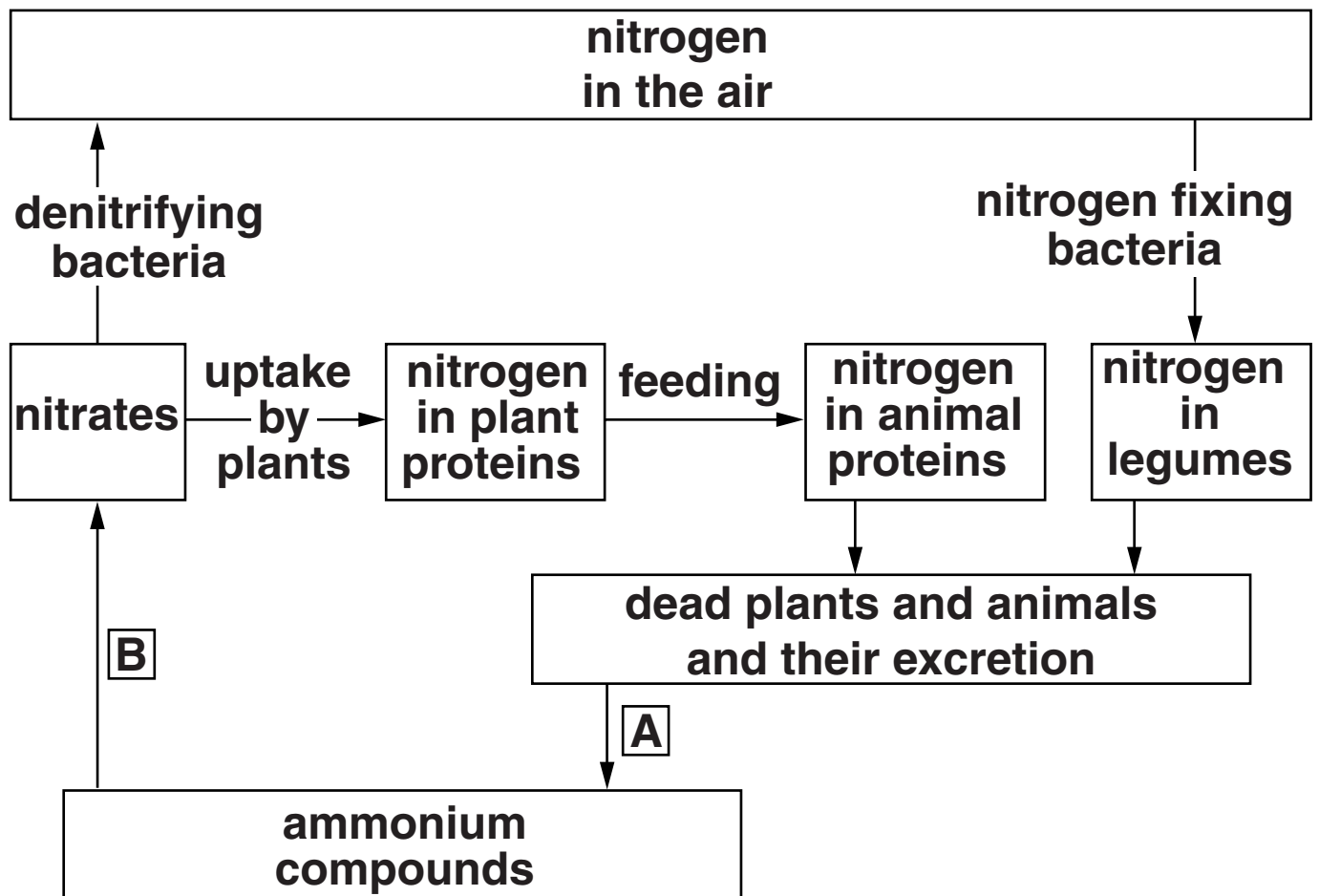
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**[4]**

**[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.**

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**[2]**

**[TOTAL: 2]**

10

## ALLOTMENT NEWS

Expert advises:

"Use a crop rotation system on your vegetable plots."

**Explain why crop rotation is important.**

**Suggest how the allotment holders should organise their plots.**



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

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**[6]**

**[TOTAL: 6]**

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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.**

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**[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]**

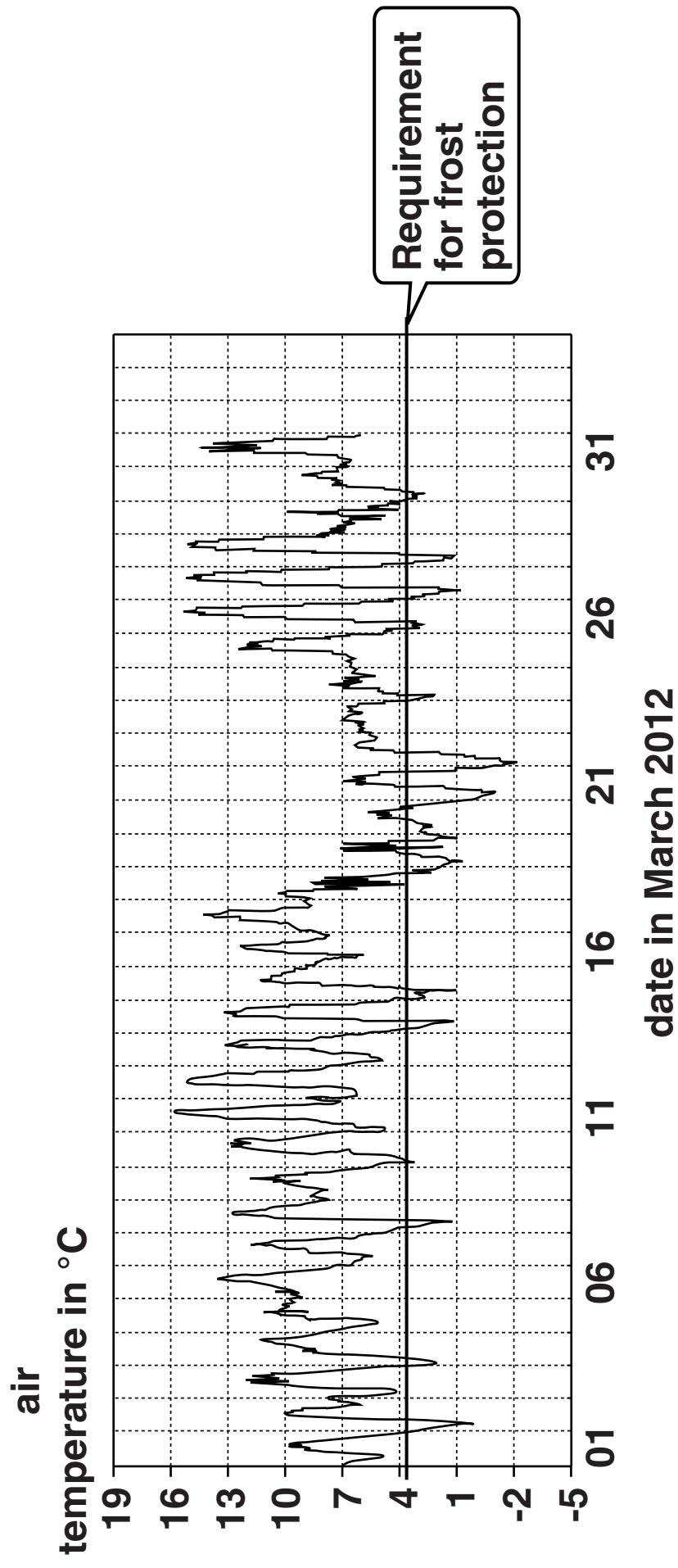
- (iii) State how the MEAN temperature could be calculated for any one day.**

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

**12 Pigs are being raised in an outdoor system where they are given space to roam freely.**

**Describe and explain the ENVIRONMENTAL advantages and disadvantages of keeping pigs this way.**



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

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**[6]**

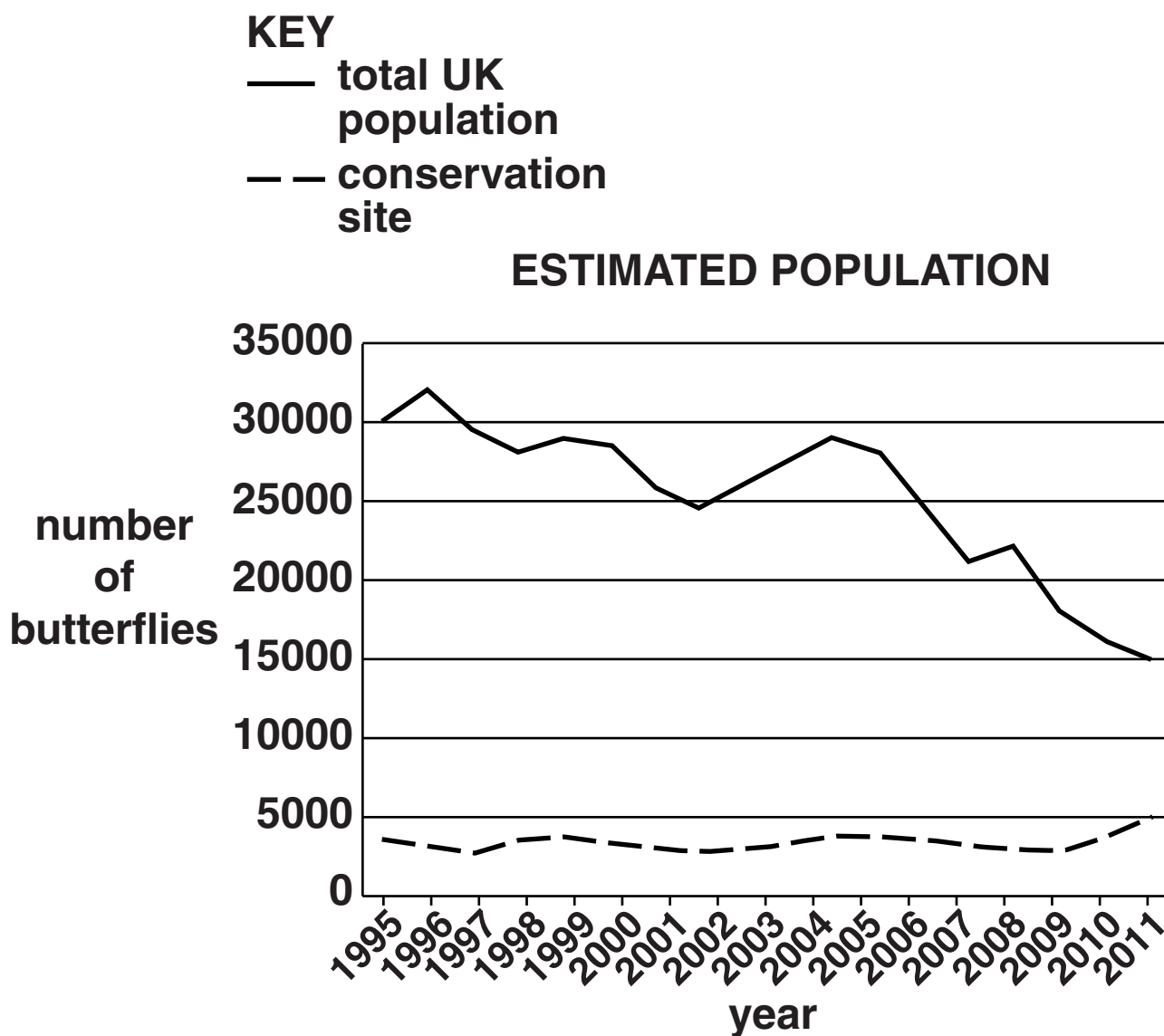
**[TOTAL: 6]**

### 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.**

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**[2]**

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

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**[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?**

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**[1]**

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

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

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**[1]**

**[TOTAL: 7]**

**14 Matt and Sarah want to grow some plants in their garden.**

**They think it is a good idea to test the pH of their soil before they choose the plants.**

**They buy a pH soil test kit.  
There are no instructions with the soil test kit.**

**Write detailed instructions on how to find the pH of their garden soil.**



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

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**[6]**

**[TOTAL: 6]**



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