

**Thursday 12 June 2014 – Morning**

**GCSE ENVIRONMENTAL AND LAND-BASED SCIENCE**

**B681/01** Management of the Natural Environment (Foundation Tier)

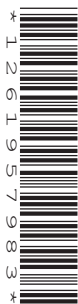
Candidates answer on the Question Paper.  
A calculator may be used for this paper.

**Duration:** 1 hour

**OCR supplied materials:**  
None

**Other materials required:**

- Pencil
- Ruler (cm/mm)




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. 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**

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

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 These 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.

.....

.....

.....

.....

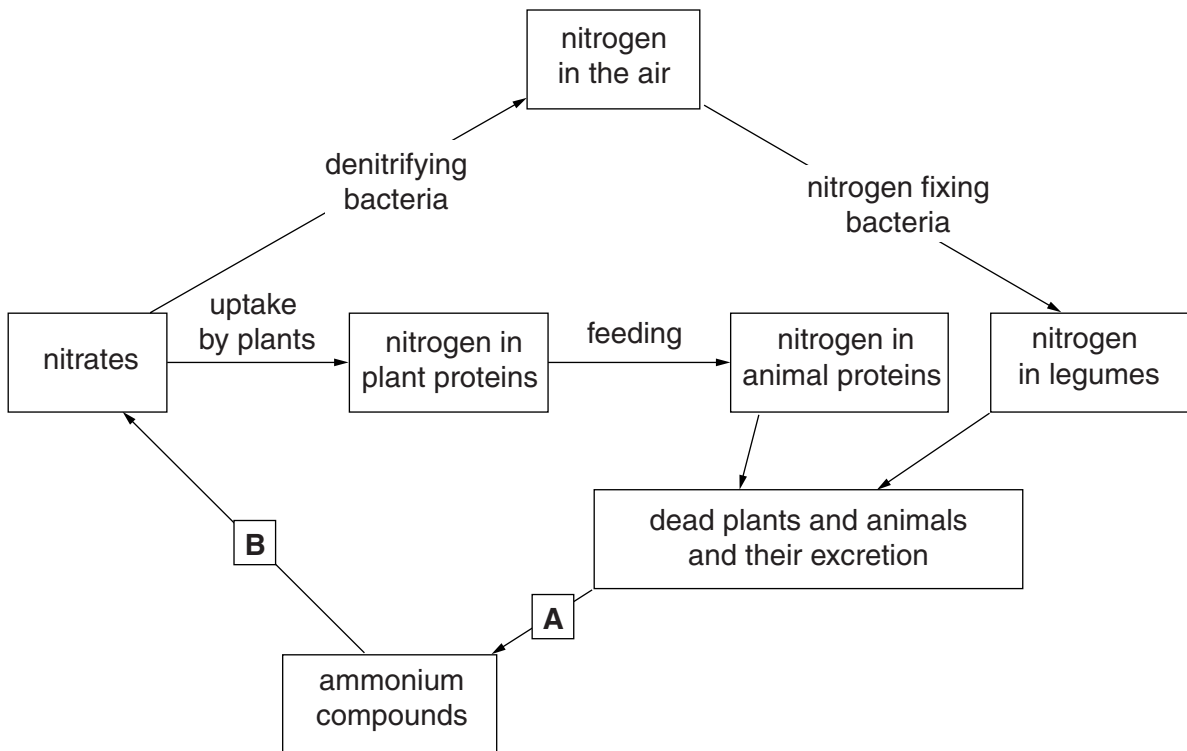
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.....

..... [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.

.....

.....

..... [2]

[Total: 2]





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

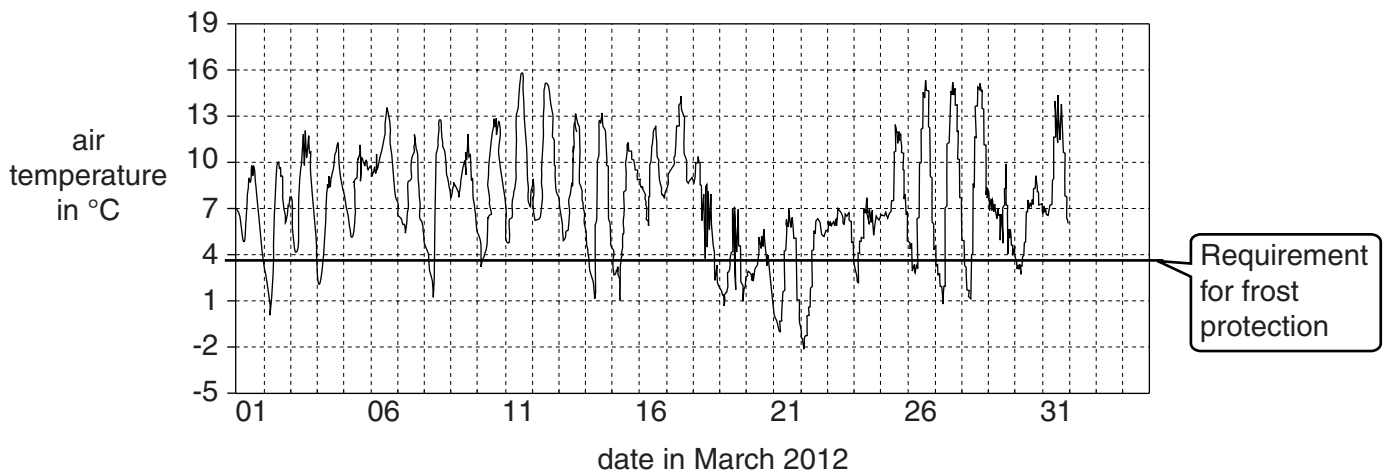
This includes measuring the amount of rainfall every day.

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 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  
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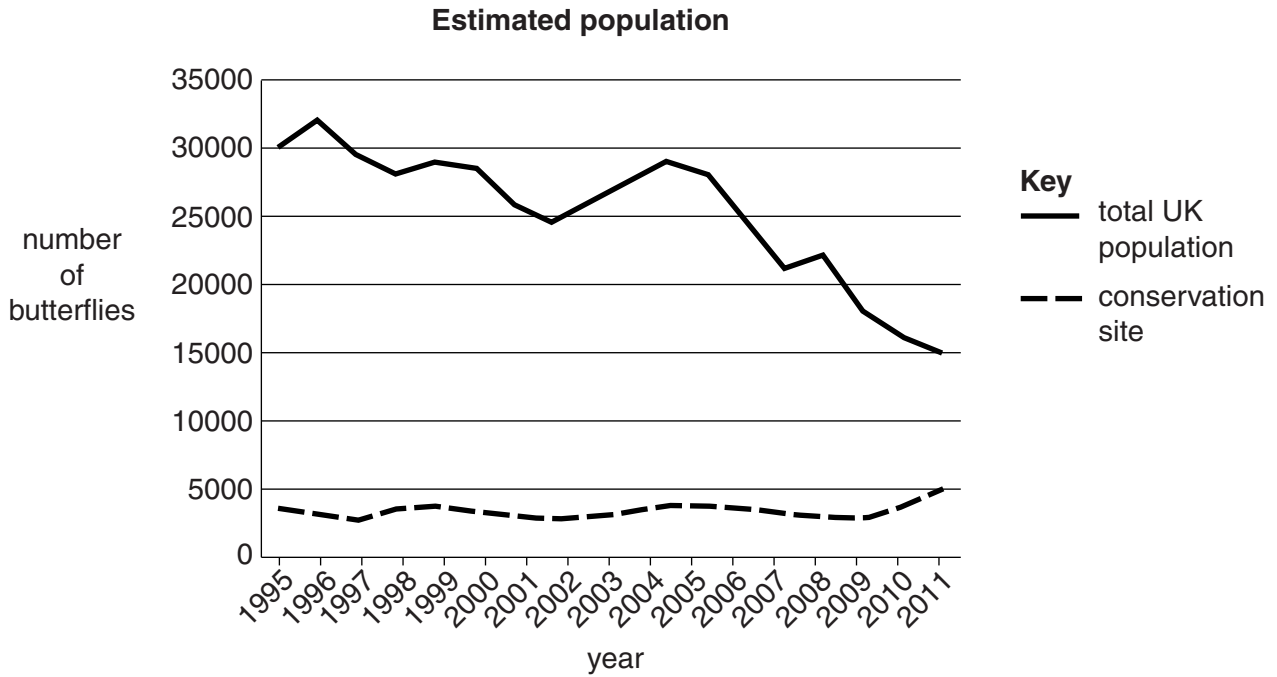
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13 Some species of butterfly are endangered.

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]

Question 14 begins on page 16.

