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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.

OCR supplied materials:

None

Other materials required:

- Pencil
- Ruler (cm/mm)

Duration: 1 hour



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 (-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.

.....

.....

.....

.....

.....

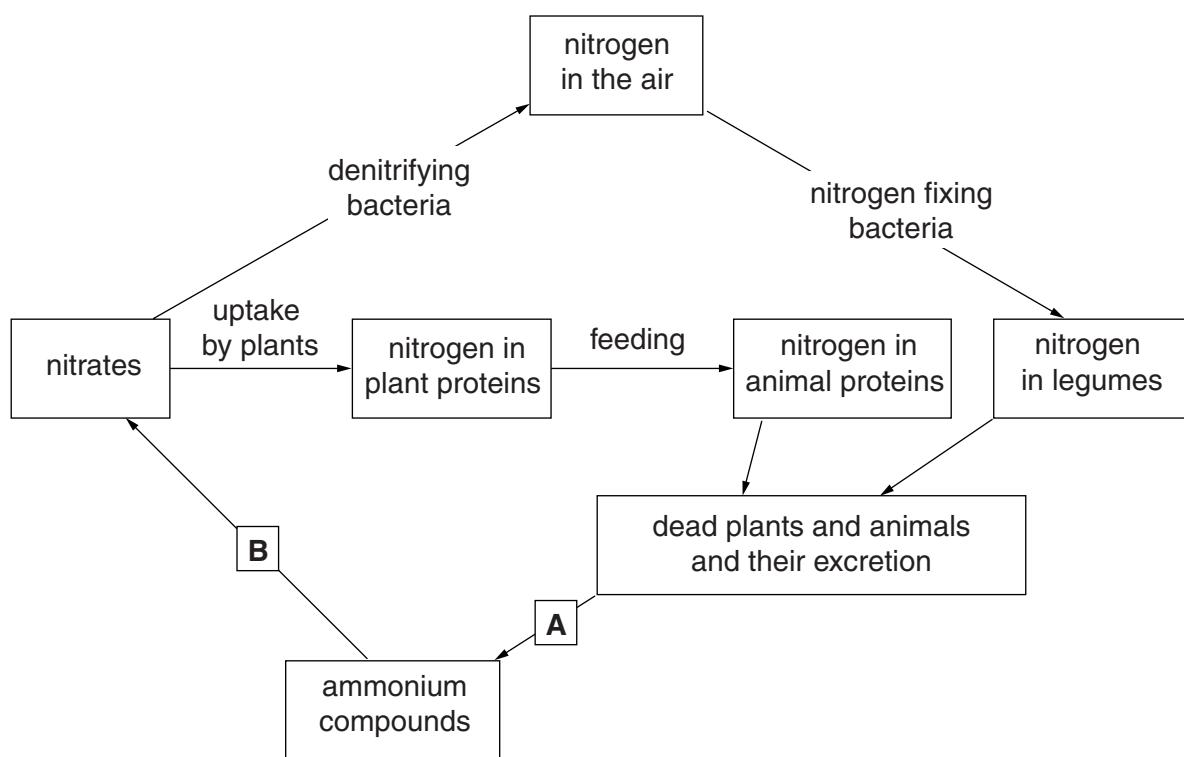
.....

.....

[4]

[Total: 4]

7 The diagram shows part of the nitrogen cycle.



(a) The process at point A is

decay	<input type="checkbox"/>
fixation	<input type="checkbox"/>
nitrification	<input type="checkbox"/>
respiration	<input type="checkbox"/>

Tick (✓) one box only.

[1]

(b) The process at point B is

decay	<input type="checkbox"/>
fixation	<input type="checkbox"/>
nitrification	<input type="checkbox"/>
respiration	<input type="checkbox"/>

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]

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.

[6]

Total: 61

10

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

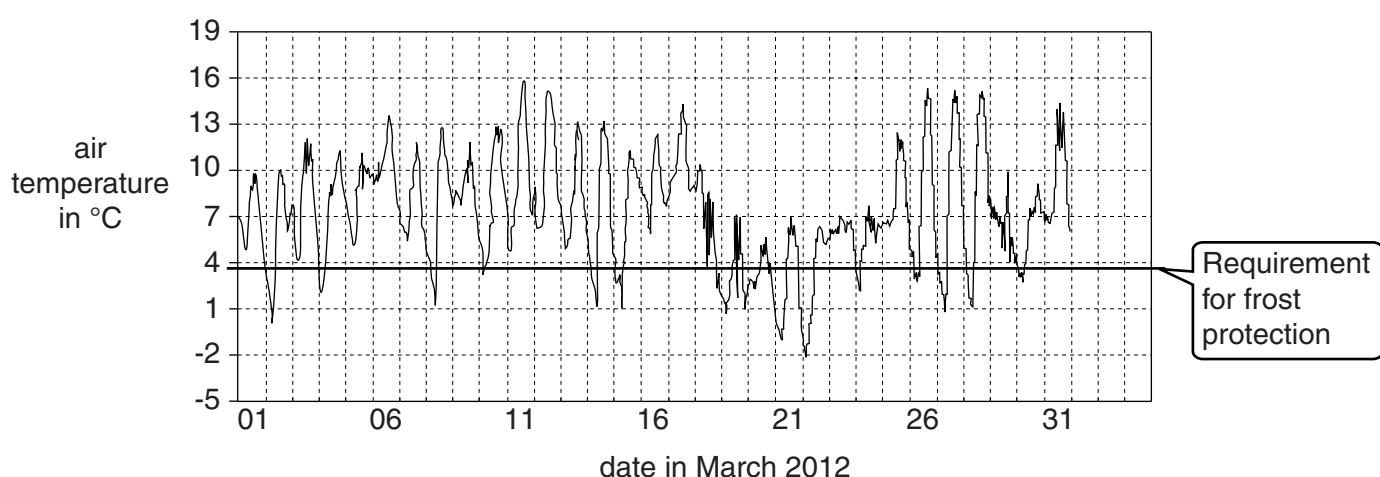
This includes measuring the amount of rainfall every day.

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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PLEASE DO NOT WRITE ON THIS PAGE

13

12 These 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.

[61]

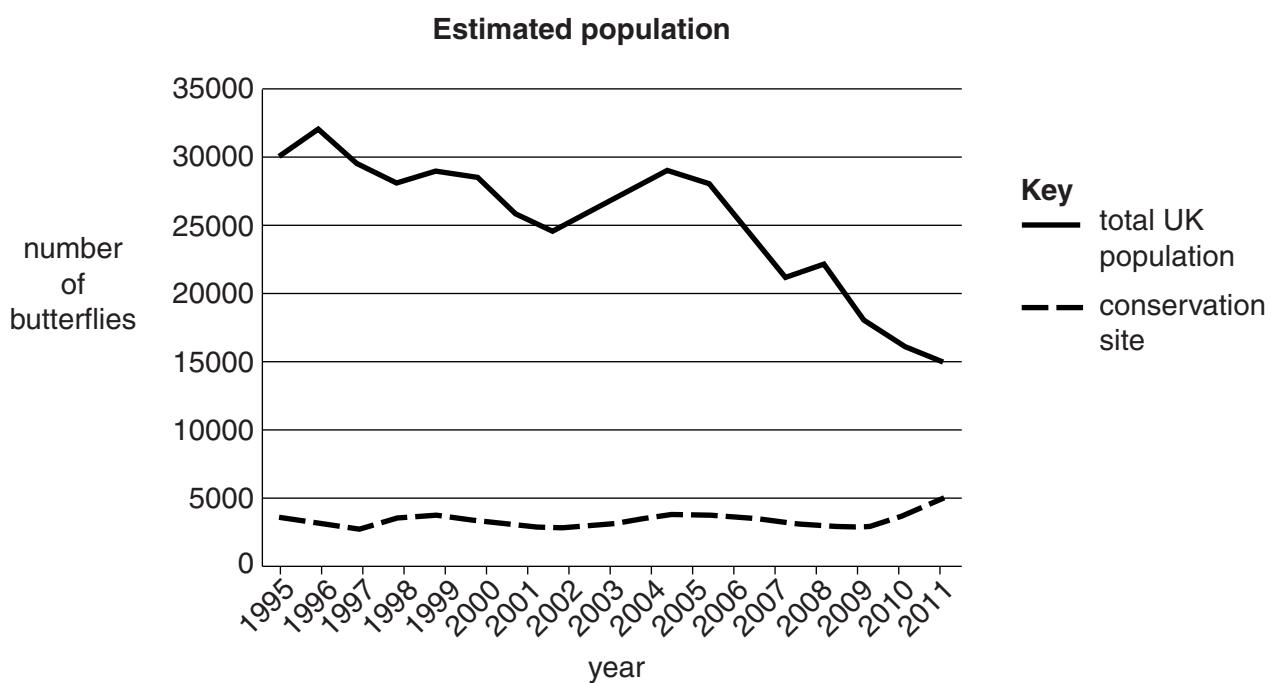
.. [6]

[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.

.....
.....
.....

[2]

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

.....
.....
.....

[2]

15

(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.

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.

[6]

〔6〕

[Total: 6]

END OF QUESTION PAPER



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