



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			
Centre number				Candidate nu	umber		

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 (\checkmark) 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 (\checkmark) 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]

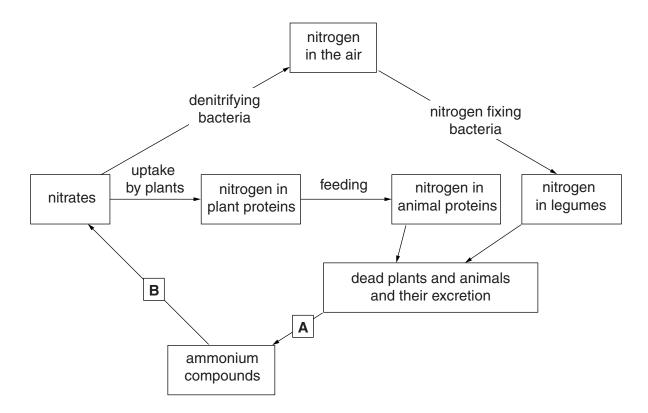
[Total: 2]

		0	
5	Wh	nich one of the following is the definition of biodiversity ?	
	A	Animals that have been raised organically.	
	В	Organisms that are genetically modified.	
	С	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		bbits were first introduced to the UK by the Romans. bbits are now very common in the countryside.	
	Ra	bbits have adapted well to living in the UK.	

[Total: 4]

Suggest four of these adaptations.

7 The diagram shows part of the nitrogen cycle.



				_	_	_
(a)	The	process	at	point	Α	is

decay	
fixation	
nitrification	
respiration	

Tick (✓) one box only.

(b) The process at point B is

decay	
fixation	
nitrification	
respiration	

Tick (\checkmark) one box only.

[1]

[1]

[Total: 2]

8	A fo	A food web shows the feeding relationships between plants and animals in a habitat.			
	A fo	ood web will show producers and consumers .			
	Which one of the following in a food web is a producer ?				
	Α	bird			
	В	cow			
	С	farm manager			
	D	fox			

[Total: 1]

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



nother field.	Suggest two hazards of moving sheep into
[01	
[2] [Total: 2]	

Ε

wheat

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	
 	[6]
	[Total: 6]

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 fo the plants in the school grounds.
(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.
air temperatui in °C	19 16 13 10 7 4 1 -2 -5 01 06 11 16 21 26 31 date in March 2012
	(i) On which date was the highest temperature recorded?
	Answer
	Answer[1] (iii) State how the mean temperature could be calculated for any one day.

(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 ou frost-tender plants?	it
(c)	Ove	er many years the school has monitored:	
		the air temperature	
		• rainfall	
		sunlight levels.	
	This	s information can then be used to help the school grow plants.	
	Sug	ggest two other weather conditions that the school could use ICT to monitor.	

[Total: 8]

12 BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE

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



	and explain the environmental advantages and disadvantages of keeping pigs this way
T	The quality of written communication will be assessed in your answer.
	[6]

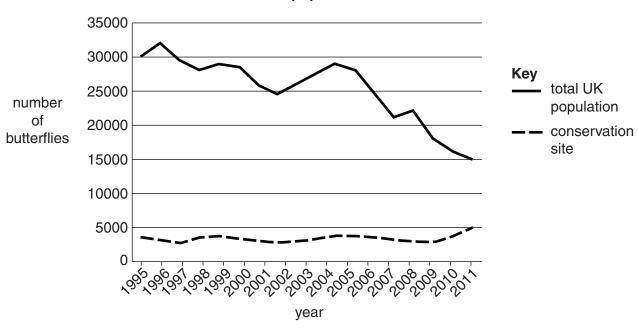
[Total: 6]

13 Some species of butterfly are endangered.

For one butterfly species the graph shows:

- the total UK population
- the numbers at one conservation site.

Estimated population



(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?
	(ii)	Answer% [1] Why might this be a problem?
(d)	A bu	utterfly 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]

END OF QUESTION PAPER

[Total: 6]



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