

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**ENVIRONMENTAL AND LAND-BASED SCIENCE**  
Management of the Natural Environment (Foundation Tier)

**B493/01**

Candidates answer on the question paper.

**OCR supplied materials:**

None

**Other materials required:**

- Electronic calculator
- Pencil
- Ruler (cm/mm)

**Wednesday 25 May 2011**  
**Morning**

**Duration: 45 minutes**



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**MODIFIED LANGUAGE**

**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. Pencil may be used for graphs and diagrams only.
- 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).
- Answer **all** the questions.
- Do **not** write in the bar codes.

**INFORMATION FOR CANDIDATES**

- 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 **36**.
- This document consists of **20** pages. Any blank pages are indicated.

Answer **all** the questions.

- 1 The photograph shows an area a teacher wants to use for fieldwork.

Doing fieldwork can be hazardous.



Two possible hazards are given.

Draw a straight line to connect each **hazard** to its correct **control measure**.

**hazard**

**control measure**

slipping on rocks

wear footwear with grip

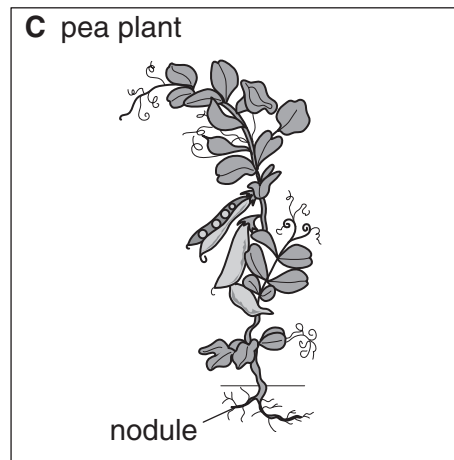
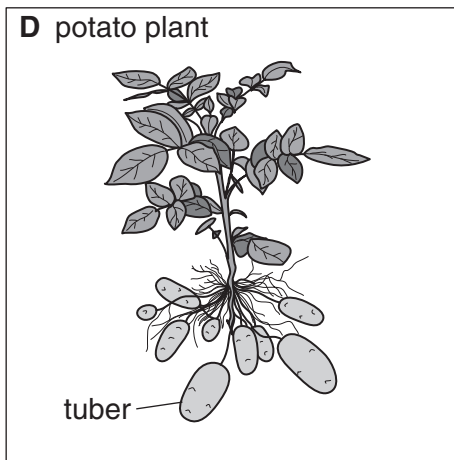
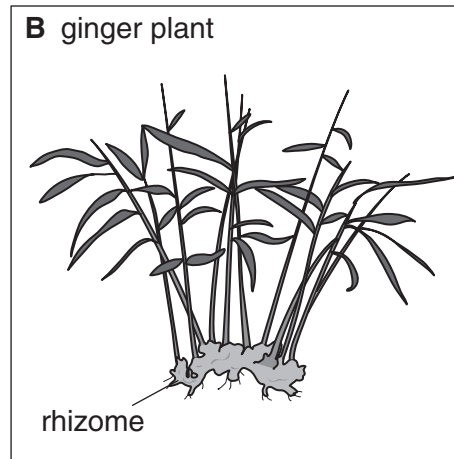
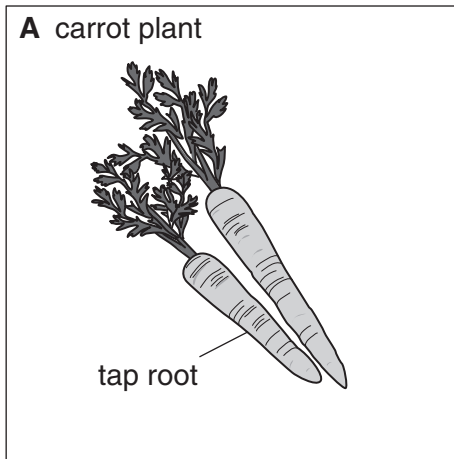
heat stroke

carry water to prevent dehydration

wash hands before starting work

[1]

2 The drawings show four plants.



It is important to include legumes in crop rotations.

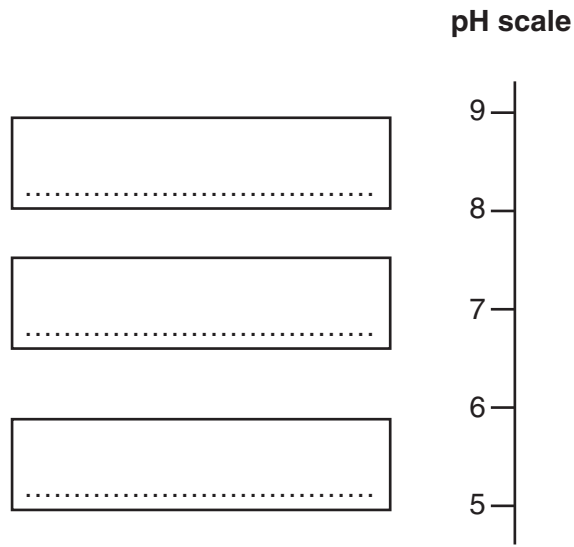
Choose the plant that is a legume.

- A carrot
- B ginger
- C pea
- D potato

Answer **A, B, C** or **D** ..... [1]

3 Soils can be acidic, neutral or alkaline.

Write the terms **acidic**, **alkaline** and **neutral** in their correct positions on the pH scale below.



[2]

4 (a) Which soil type has the following characteristics?

- water runs through it quickly
- it feels gritty to the touch
- there is no swelling or shrinkage
- has the largest mineral particle size

..... [1]

(b) Give **one** other characteristic of this type of soil.

.....  
..... [1]

5 Which **one** of the following is the best description of a habitat?

- A a group of organisms
- B the behaviour of an organism
- C what an organism eats
- D a place where organisms live

Answer **A, B, C** or **D** ..... [1]

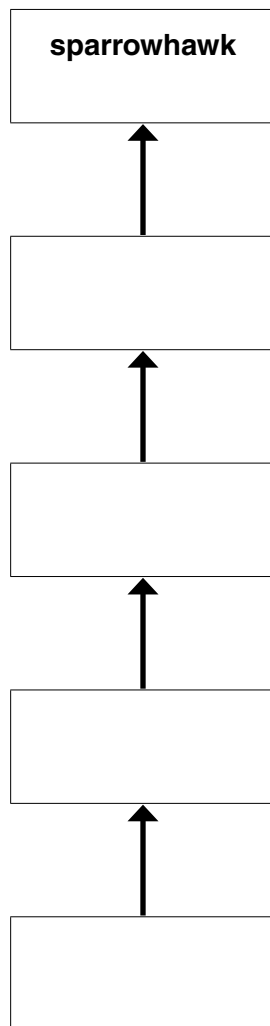
6 The information describes what some animals eat:

- ladybirds eat aphids
- sparrows eat ladybirds
- aphids eat plants
- sparrowhawks eat sparrows

Use this information to make a food chain by writing each organism into its correct place.

**aphids**  
**ladybird**  
**plants**  
**sparrow**  
**sparrowhawk**

One has been done for you.



7 Farmers need to control weeds.

They can use three different methods:

- cultural control
- chemical control
- organic control

In the list below put rings around **two** examples of **cultural** weed control.

- grafting
- layering
- mulching
- spraying
- black polythene

[2]

8 The photograph shows a mole.



Moles dig tunnels through soil.

(a) Give **one** way the mole is adapted for digging through soil.

..... [1]

(b) Moles have poor eyesight.

Why is good eyesight **not** important to moles?

..... [1]



9 The photograph shows an ivy plant growing from the soil up the trunk of a tree.



The ivy plant is growing up the tree towards the light.

(a) What does the tree provide for the ivy plant that helps it to grow upwards?

..... [1]

(b) The ivy plant competes with the tree for light.

Suggest **one** other thing they compete for.

..... [1]

10 The photograph shows a tree.



The tree loses its leaves in the autumn.

Name **one** organism in the soil that helps to recycle the nutrients in these leaves.

..... [1]

- 11 The photograph shows a warning sign on an ancient monument.  
The sign says:

**'DANGER DO NOT CLIMB ON THE WALLS'**



The sign is there to stop people climbing on the monument.

Suggest **two** reasons why.

- 1 .....
- .....
- 2 .....
- ..... [2]

12 The photograph shows a road sign. Two energy sources provide power for it.



(a) What **two** energy sources are used by the road sign?

energy source 1 .....

energy source 2 ..... [1]

(b) Explain why the road sign has two energy sources rather than just one.

.....

..... [1]

13 The Countryside and Rights of Way Act gives the public access to large areas of 'open country' ('the right to roam').

The Act does not include private areas like gardens.

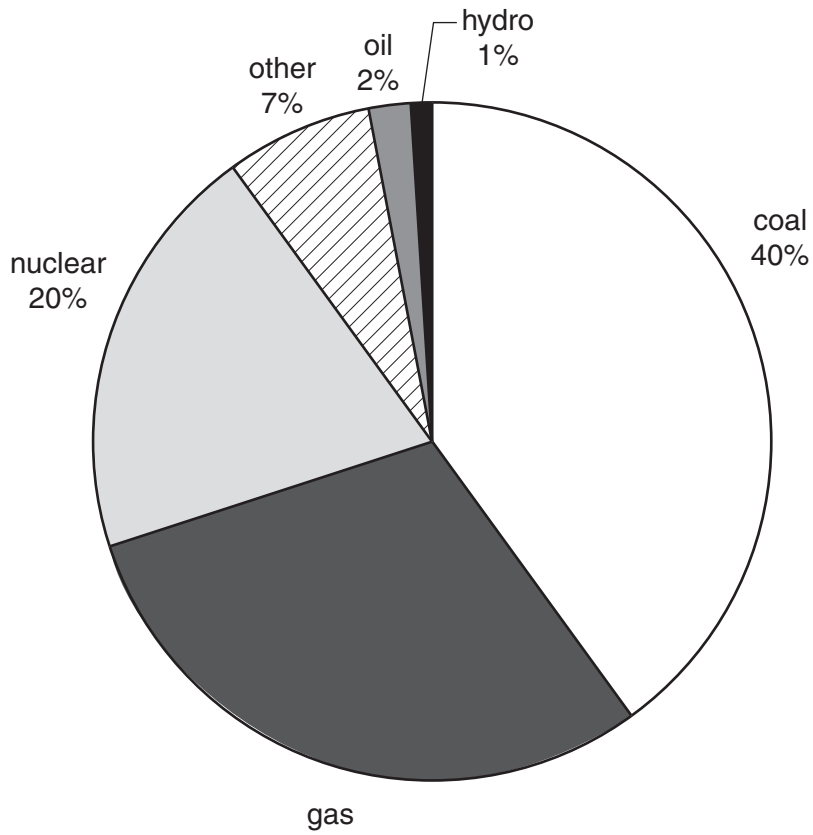
Suggest **two** other areas where you have no 'right to roam'.

.....

..... [2]

14 Electricity is generated from several different resources.

The pie chart shows the percentage of each resource used to generate electricity in the UK.



(a) What percentage of energy is generated from nuclear fuel?

..... [1]

(b) Calculate the percentage of energy generated from gas.

..... [1]

15 The water supply to a house can be metered or unmetered.

Half the houses in a street had water meters, the other half did not.

OCRAWAT is a water supply company.

It measured the volume of water used by each house in this street.

Here are the results.

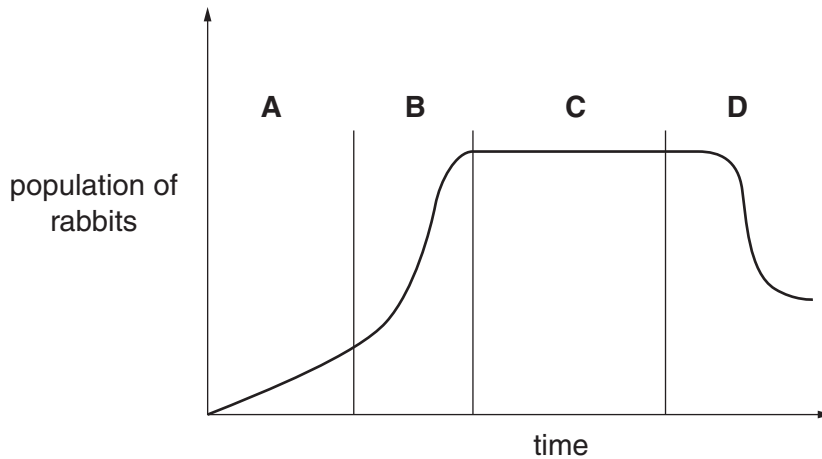
volume of water used (litres per house per day)			
year	metered	unmetered	average
2007	133	153	143
2008	135	155	145
2009	129	149	.....

(a) Complete the table by calculating the average volume of water used in 2009. [1]

(b) A family of three lived in a metered house. What was the average daily water consumption per person in 2008?

..... [1]

16 The graph shows how the population of rabbits in a field changed over a period of time.



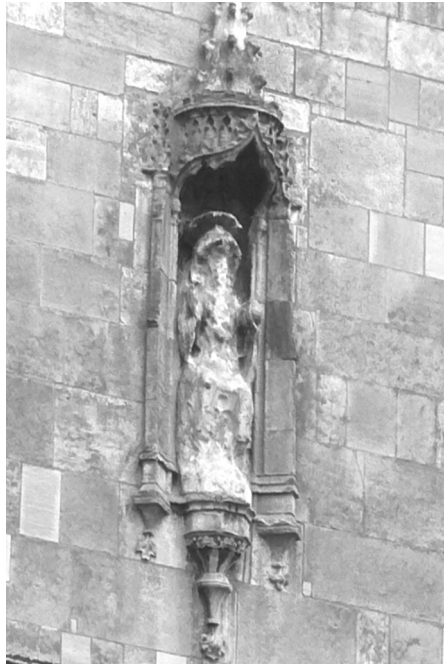
(a) At which time interval, A, B, C or D, did the rabbit population increase the fastest?

..... [1]

(b) What does part C tell you about the birth and death rate of the rabbits?

..... [1]

17 The photograph shows a stone carving that has been weathered.



Describe **two** causes of weathering.

.....

.....

.....

..... [2]

18 The photograph shows a field being sprayed.



The arms of the sprayer are very long.

Write about the advantages and disadvantages of using long spraying arms.

.....

.....

.....

.....

.....

.....

[3]



19 The photograph shows an intensive outdoor pig farm.



These farms can be smelly and noisy.

Intensive animal production systems cause other **direct** effects on the environment.

Describe these effects.

.....

.....

.....

.....

.....

..... [3]

**END OF QUESTION PAPER**

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