UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

AGRICULTURE **0600/02**

Paper 2 **October/November 2011**

1 hour 15 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
1	
2	
3	
4	
5	
6	
7	
8	
9	
Total	

This document consists of **15** printed pages and **1** blank page.

UNIVERSITY of CAMBRIDGE International Examinations

1 Table 1.1 shows the products obtained from farm animals.

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Table 1.1

farm animal	feeding classification		products					
			eggs	meat	milk	feathers	skins	wool
cattle	G	R		✓	✓		✓	
chickens	F	P	✓	✓		✓		
donkeys	B	NR		✓	✓			
ducks	F	P	✓	✓		✓		
geese	G	P	✓	✓		✓		
goats	B	R		✓	✓		✓	
pigs	F	NR		✓				
rabbits	G	NR		✓			✓	
sheep	G	R		✓	✓		✓	✓
turkeys	F	P	✓	✓		✓		

key to feeding classification

G = grazing animal
B = browsing animal
F = foraging animal
R = ruminant
NR = non-ruminant
P = poultry

(a) (i) Name a browsing non-ruminant. .....

(ii) Which grazing animal provides eggs and feathers? .....

(iii) Which farm animal provides the most products? .....
[3]

(b) All the animals in Table 1.1 provide meat.

Describe how the animals should be kept to provide 'organic' meat.

.....

.....

.....[2]

(c) Table 1.2 shows part of a crop rotation.

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Table 1.2

	year 1	year 2
field A		cereal crop
field B	cereal crop	root crop
field C	root crop	

(i) Complete Table 1.2 to show a three field rotation using **one** of the crops below.

inter-crop **legume crop** **mono-crop** **organic crop**

[1]

(ii) Explain how crop rotation benefits

the farmer, ...

.....

the soil. .....

.....[2]

(iii) Suggest **two** reasons why it would be useful to include pigs in rotation with cereal and root crops.

.....

.....

.....[2]

[Total: 10]

2 **(a)** Fig. 2.1 shows weathering of rocks.

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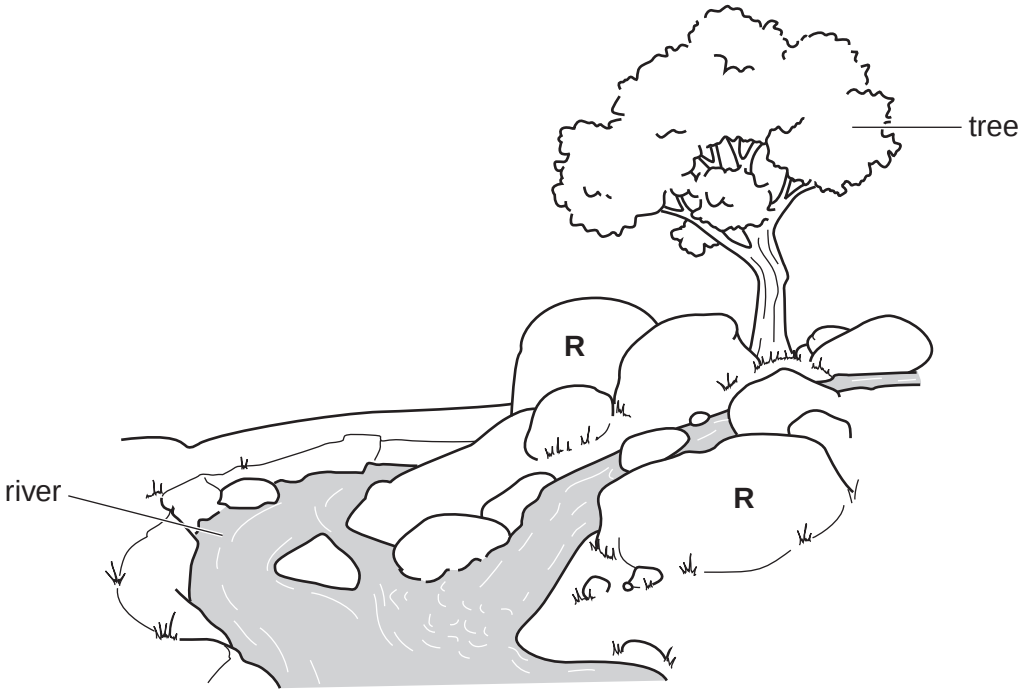

Fig. 2.1

Rocks are weathered by biological, chemical and physical agents.

(i) Place **P** on Fig. 2.1 to show where physical breakdown is taking place. [1]

(ii) Explain how the rocks labelled **R** might be further broken down.

.....

.....

.....[2]

(iii) State two ways in which the tree helps in the formation of soil.

1 .....

.....

2 .....

.....[2]

(b) Soil, once formed, can be eroded.

List three ways in which soil erosion can be prevented.

1 .....

2 .....

3 .....[3]

[Total: 8]

For Examiner's Use

3 Table 3.1 compares a clay soil with a sandy soil.

For Examiner's Use

Table 3.1

	clay soil	**sandy soil**
cultivation	difficult	easy
drainage		
temperature	warms and cools slowly	warms and cools quickly
water holding		

(a) (i) Complete the table using the words **good** or **poor**. [2]

(ii) State how clay soil can be treated to make cultivation easier.

.....

..... [1]

(iii) Explain why a sandy soil warms and cools quickly.

.....

.....

..... [2]

(b) (i) Describe two methods of draining soil.

1 .....

.....

2 .....

..... [2]

(ii) Explain how drainage would improve the growth of pasture plants.

.....

.....

..... [2]

[Total: 9]

4 Fig. 4.1 shows parts of a plant and the way in which water moves through the plant.

For Examiner's Use

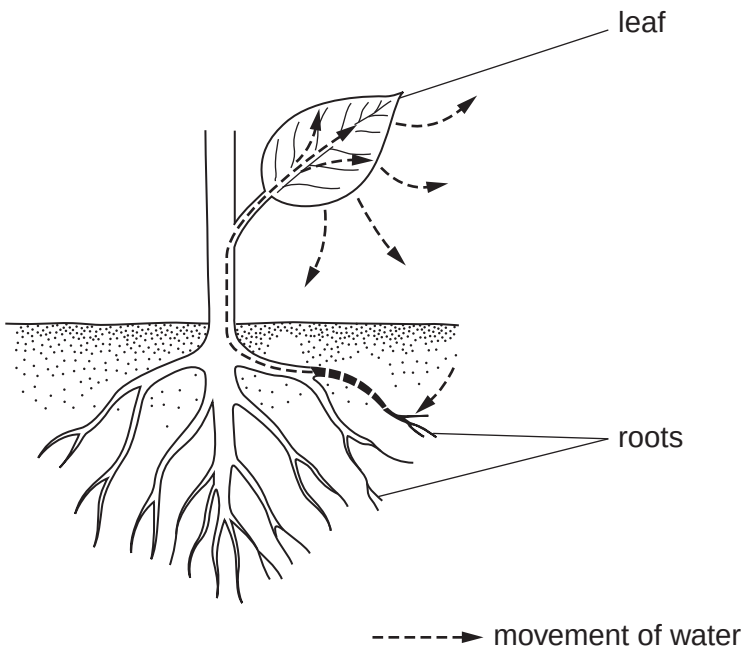

Fig. 4.1

Water is essential for growing plants.

(a) State two ways in which a plant uses water.

1 .....

2 .....[2]

(b) Name the process by which water enters the roots.

.....[1]

(c) Name the process by which water leaves the plant.

.....[1]

(d) Explain why a plant wilts.

.....

.....[2]

(e) It is best to water plants in the evening rather than at midday.

Suggest an explanation for this.

.....

.....

.....[1]

[Total: 7]

5 **(a)** You are asked to grow cereals in a garden plot.
The plot was last used two years ago.

(i) Describe how you would prepare a seed bed for a **named** cereal in this plot.

cereal .....

.....

.....

.....

.....[3]

(ii) Name a fertiliser you would use and state when it should it be applied.

name of fertiliser .....

time of application .....[2]

(b) Fig. 5.1 shows a building for storing maize after harvest.

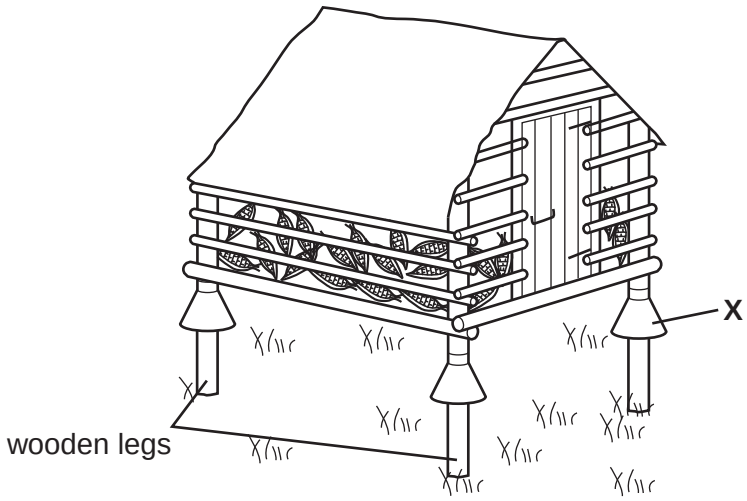

Fig. 5.1

(i) List two environmental conditions needed for the successful storage of cereal crops like maize.

1 .....

2 ..... [2]

(ii) State how the wooden legs can be preserved.

.....

.....[1]

(iii) Explain how the structure at **X** keeps some pests away from the stored crop.

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.....

..... [1]

(iv) Suggest a material for building the roof.

Give two reasons, other than cost, for your choice.

material chosen .....

reason 1 .....

.....

reason 2 .....

..... [2]

[Total: 11]

6 **(a)** Fig. 6.1 shows an Irish potato plant.

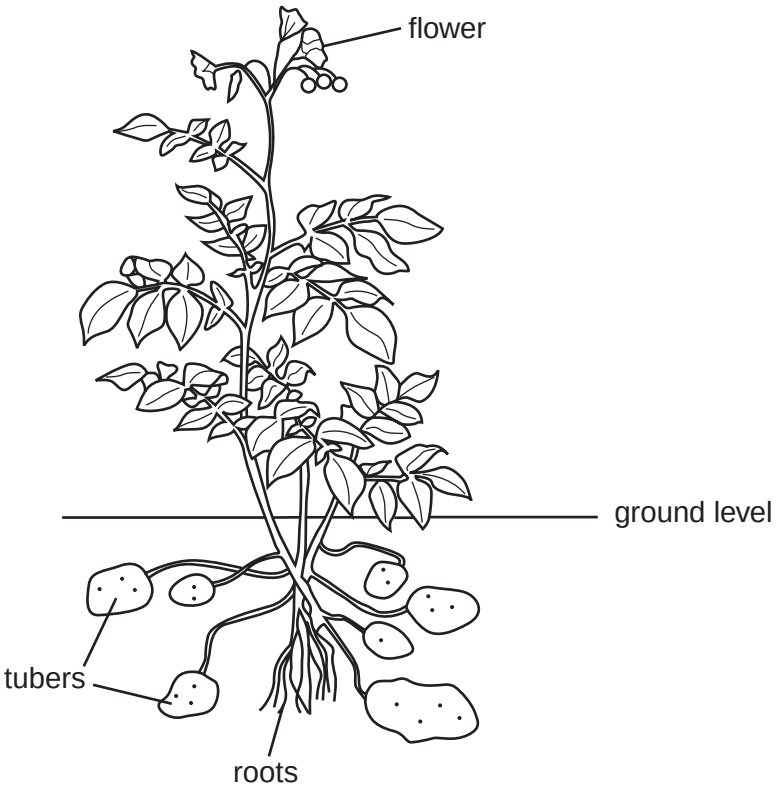

Fig. 6.1

Irish potatoes can suffer from blight.

(i) What type of organism causes blight? .....[1]

(ii) Give the environmental conditions which favour the spread of blight.

.....[1]

(b) Blight can be controlled by spraying the potato plant with chemicals.
When spraying, the operator must wear protective clothing.

State two **other** precautions that must be taken when spraying the crop.

1 .....

.....

2 .....

.....[2]

(c) The Irish potato in Fig. 6.1 is resistant to blight.
Resistance is genetically determined by the dominant allele R.

The blight resistant plant in Fig. 6.1 has the alleles R and r.
It is crossed with one that is non resistant.

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(i) Complete the genetic diagram for this cross.

resistant plant × non resistant plant

[4]

(ii) Put a circle ( ) around a homozygous recessive offspring. [1]

(iii) What would be the genetic make-up of the tubers shown in Fig. 6.1?

.....[1]

[Total: 10]

7 Fig. 7.1 is a diagram of the digestive system of a rabbit.

For Examiner's Use

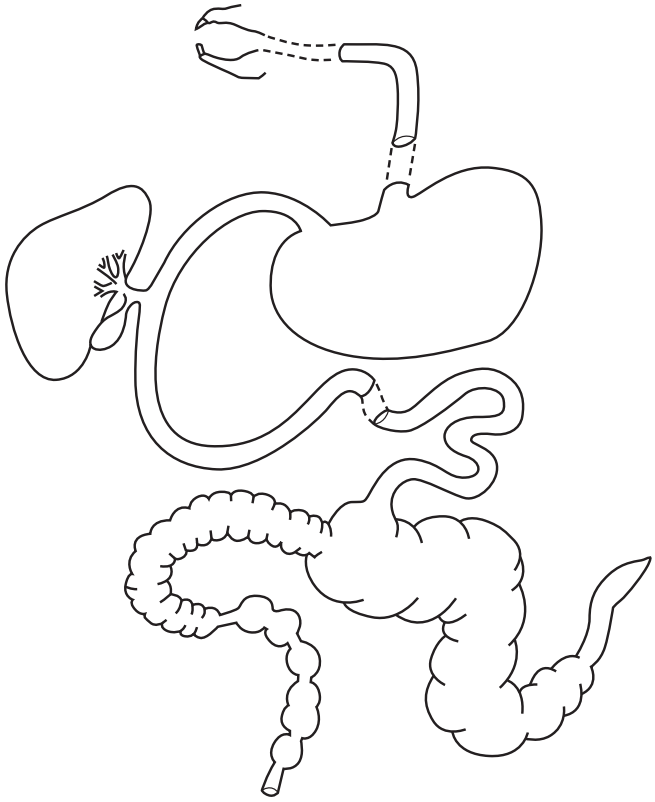

Fig. 7.1

(a) **(i)** Label the duodenum and the rectum on the diagram. [2]

(ii) The pancreas is missing from the diagram.
Draw an **X** on the diagram to show the position of the pancreas. [1]

(iii) Describe, briefly, how food is digested in a non-ruminant.

.....

.....

.....

.....[3]

(b) If a rabbit shows signs of ill health what is the first thing that its owner should do?

.....[1]

(c) Both rabbits and sheep eat grass.
Rabbits are classed as non-ruminants, sheep are classed as ruminants.
Explain why.

.....

.....[1]

[Total: 8]

8 Plants and animals have comparable stages and structures for sexual reproduction.

For Examiner's Use

(a) Match the comparable stages and structures below by joining them with a line.

One has been done for you.

animal	**plant**
birth	anther
egg	germination
mating	ovary
ovary	ovule
sperm	pollen grain
testis	pollination

[4]

(b) What is meant by *fertilisation*?

.....

.....[2]

(c) Fig. 8.1 shows the life cycle of a farm animal.

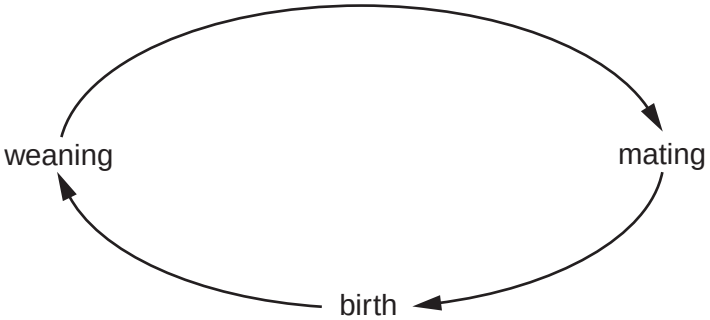

Fig. 8.1

Label on Fig. 8.1 where lactation starts. [1]

(d) Explain the importance of colostrum to young animals.

.....

.....

.....[2]

[Total: 9]

9 **(a)** Most farm animals are kept for meat.

Fig. 9.1 shows the relationship between the quality of meat and the number and price of animals.

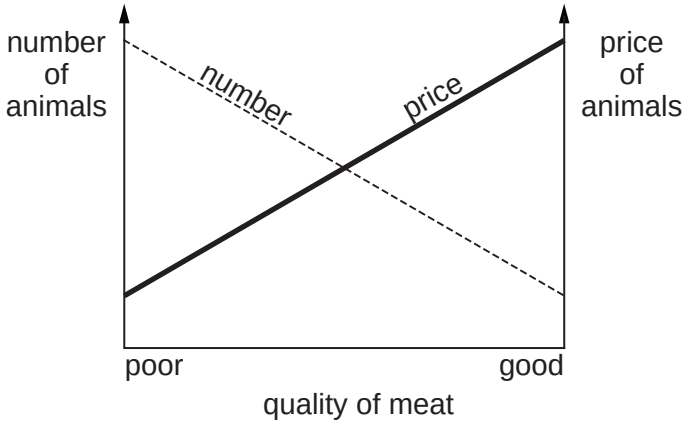

Fig. 9.1

What does the graph in Fig. 9.1 show?

.....[1]

(b) Some farmers keep animals in livestock houses to improve growth and production.

State two aspects of livestock hygiene that need to be maintained in livestock houses.

1 .....

2 .....[2]

(c) Quality meat comes from well fed, healthy animals.

Explain why animals with a poor diet would not grow well.

.....

.....

.....

.....

.....[3]

For Examiner's Use

(d) Selective breeding can be used to improve meat quality.

Suggest two animal records the farmer could keep which would help to plan a breeding programme to produce good quality meat animals.

1 .....

2 .....[2]

[Total: 8]

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