Centre Number	Candidate Number	Name

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

AGRICULTURE **5038/01**

Paper 1

May/June 2006

2 hours

Candidates answer Section A on the Question Paper.
Additional Materials: Answer Booklet/Paper

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 or graphs.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Section A
Answer **all** questions.
Write your answers in the spaces provided on the Question Paper.
You are advised to spend no longer than 1 hour on Section A.

Section B
Answer any **three** questions.
Write your answers on the separate Answer Booklet/Paper provided.
Enter the numbers of the Section B questions you have answered in the grid below.

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	
Section A	
Section B	
Total	

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

Section A

Answer **all** the questions

1 **(a)** Fig. 1.1 shows part of the digestive system of a ruminant.

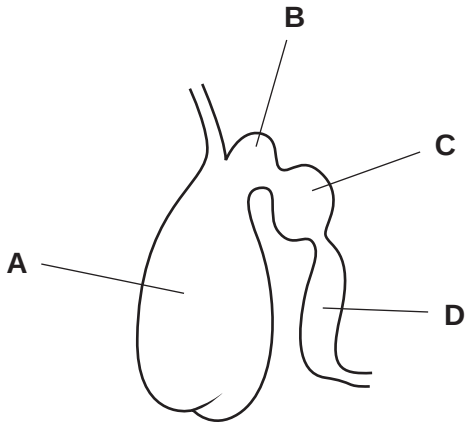

Fig. 1.1

(i) Name the structures

A .....

B .....

C .....

D ..... [4]

(ii) State the function of

A .....

.....

D .....

..... [2]

(b) State **three** problems farmers might have from livestock grazing on unenclosed land.

1. .....

.....

2. .....

.....

3. .....

..... [3]

[Total: 9]

2 **(a)** Fig. 2.1 shows a bag of fertiliser.

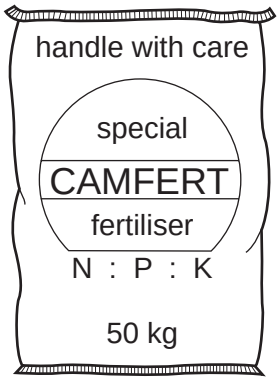

Fig. 2.1

N, **P** and **K** are the symbols for three elements needed by plants. **N** is the symbol for nitrogen. Which elements do the symbols **P** and **K** represent?

P .....

K ..... [1]

(b) Fig. 2.2 shows bags of three substances, which can be added to the soil.

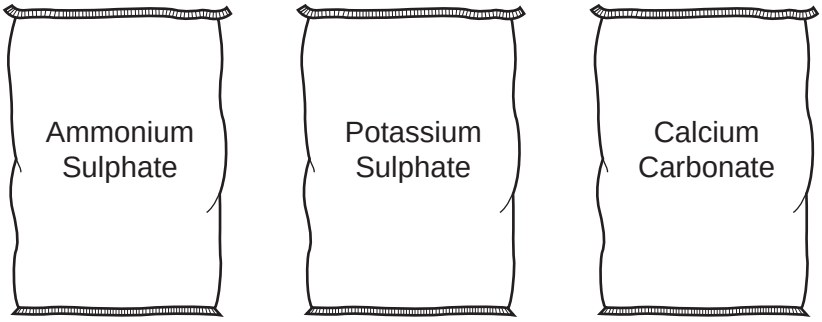

Fig. 2.2

(i) State **one** substance, in Fig.2.2, that provides plants with nitrogen.

..... [1]

(ii) Which substance, in Fig. 2.2, can be used to neutralise an acid soil?

..... [1]

(c) Fertiliser containing a high proportion of nitrogen is often given to leafy crops, to get a high yield.

Explain why.

.....

.....

..... [2]

(d) Manure from farm livestock can be added to soil. State **one** advantage and **one** disadvantage of using manure instead of fertiliser like that in Fig. 2.1.

advantage .....

.....

disadvantage .....

..... [2]

[Total: 7]

For Examiner's Use

3 **(a)** Fig. 3.1 shows an experiment that was carried out to find how effective an insecticide was in controlling insect pests from eating a plant.

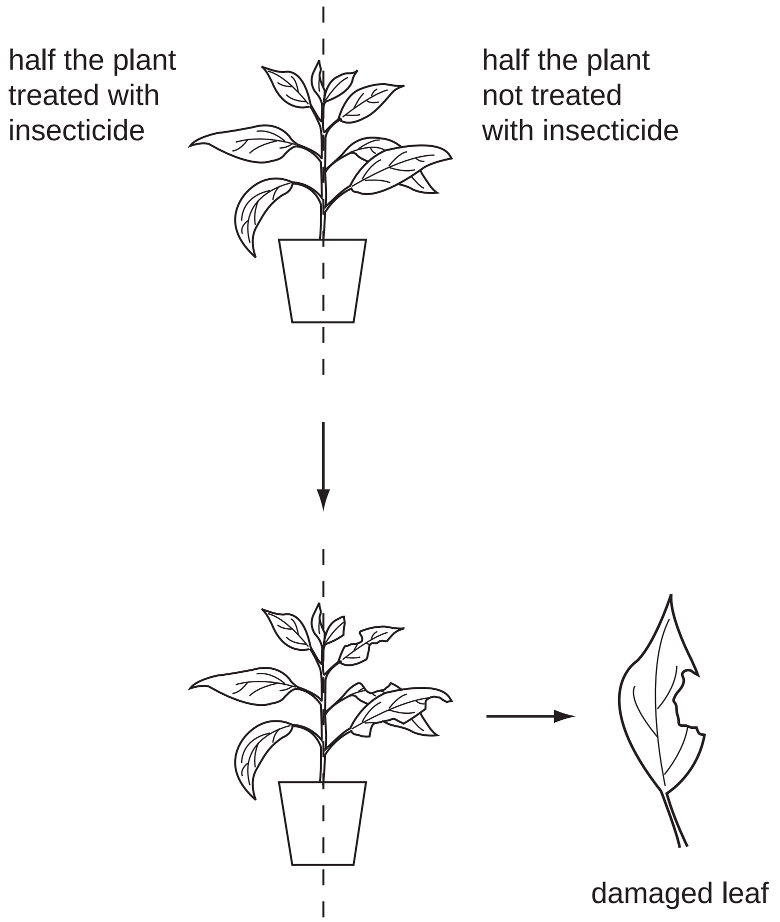

Fig. 3.1

(i) The untreated leaves show damage. How does an insect pest feed to cause this damage?

.... [1]

(ii) Name an insect pest that feeds in this way.

.... [1]

(iii) Explain why the insecticide used in the test was unlikely to have been a systemic insecticide.

....

....

....

....

.... [3]

(b) (i) State **two** ways of controlling insect pests in a crop, without using chemicals.

1. .....

2. ..... [2]

(ii) Give **two** reasons why a farmer might try to control a pest infestation without the use of chemicals.

1. .....

.....

2. .....

..... [2]

[Total: 9]

4 Fig. 4.1 shows a section through a bean seed.

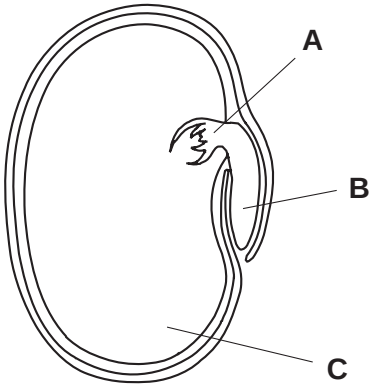

Fig. 4.1

(a) (i) What are parts **A**, **B** and **C**?

A .....

B .....

C ..... [3]

(ii) What is the function of **C**?

.....

.....

..... [2]

(b) Table 4.1 compares the size of some seeds and the depth at which they should be sown.

Table 4.1

	bean seeds	tomato seeds	carrot seeds
size of seeds	large	medium	small
depth of sowing	4 cm	1 cm	0.5 cm
soil preparation	medium tilth	medium tilth	fine tilth

(i) Explain why small seeds should be sown nearer the surface of the soil than large seeds.

.....

.....

..... [2]

(ii) Suggest why small seeds need the soil to be prepared to a finer tilth than for large seeds.

.....

.....

..... [2]

[Total: 9]

5 Table 5.1 shows how a financial record could be kept for a crop-growing enterprise.

Table 5.1

Tomatoes					
Costs			Returns		
Date	Item	Amount	Date	Item	Amount
	Total costs			Total returns	

(a) List **three** items that should be entered as costs.

1. .....

2. .....

3. ..... [3]

(b) How can the farmer use the record to calculate whether he has made a profit?

.....

..... [1]

(c) State **one** record, other than financial, that a farmer should keep for a **livestock** enterprise.

..... [1]

[Total: 5]

6 As the population of a country grows, farmers need to use land more intensively in order to produce enough food.

Fig. 6.1 shows some of the effects of this.

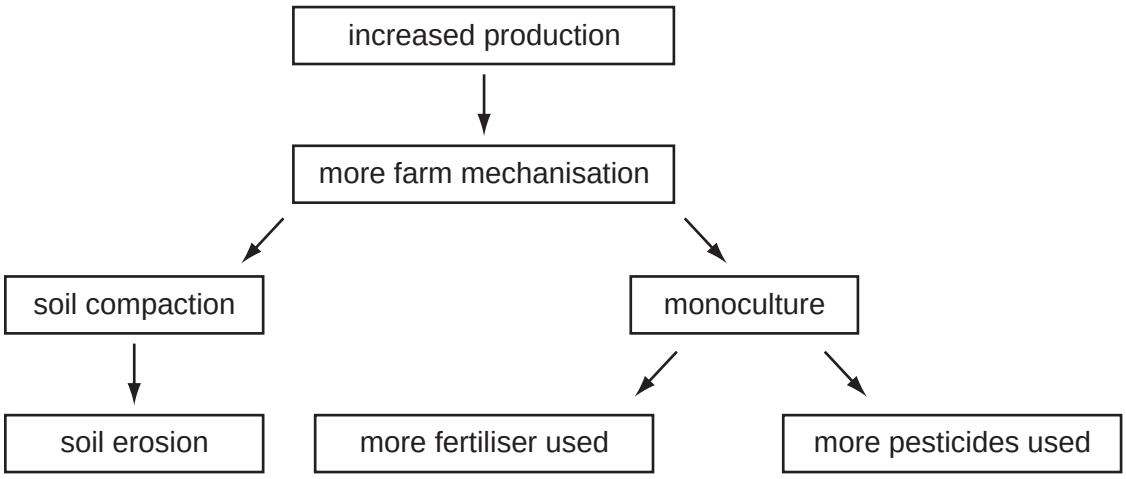

Fig. 6.1

(a) (i) Why does monoculture result in the use of more fertiliser?

.....

.....

..... [2]

(ii) Explain how farm mechanisation can cause soil compaction.

.....

.....

..... [2]

(iii) State **one** reason why soil compaction should be avoided.

.....

..... [1]

(b) A farmer can reduce the amount of soil compaction by using one machine that sows seeds and adds fertiliser. The remains of the previous crop are not ploughed in, they stay on the soil surface. Fig. 6.2 shows a machine of this type.

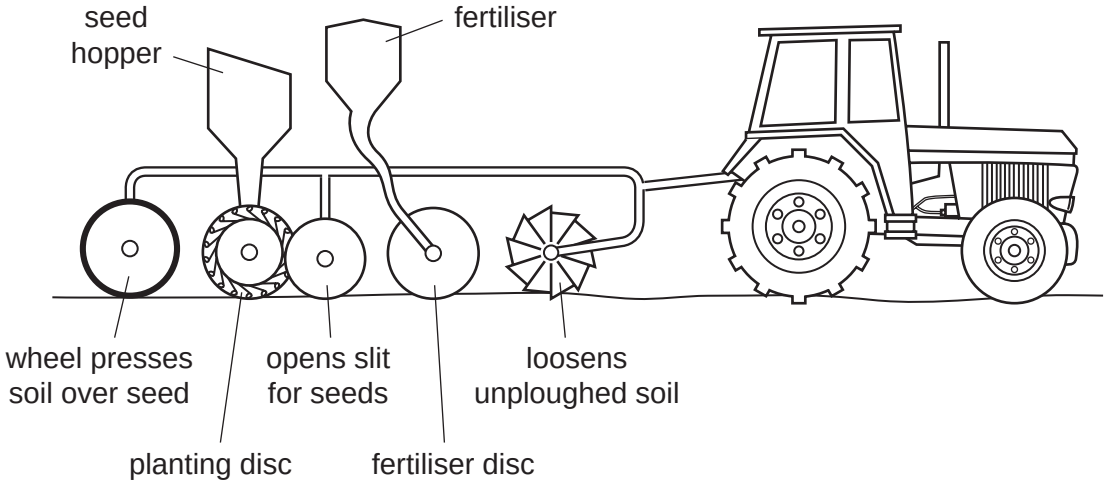

Fig. 6.2

Less soil compaction is an advantage of using this machine.
Suggest **two** other advantages of using this machine, instead of separate ploughing, planting and fertilising.

1. .....

.....

2. .....

..... [2]

[Total: 7]

7 Fig. 7.1 shows three seeds or fruits from weeds.

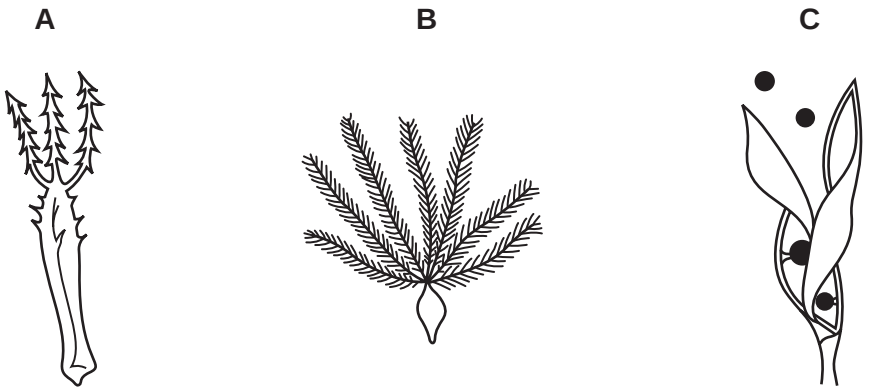

Fig. 7.1

(a) For each seed or fruit, state the way in which it is likely to be dispersed and give a reason for your answer.

A method of dispersal .....

reason .....

B method of dispersal .....

reason .....

C method of dispersal .....

reason ..... [6]

(b) State **three** reasons why weeds should be controlled.

1. .....

.....

2. .....

.....

3. .....

..... [3]

[Total: 9]

Section B

Answer any **three** questions.

Write your answers on the separate paper provided.

8 **(a)** A post and wire fence is constructed around a field. Describe, using labelled diagrams, how:

(i) the corners are constructed,

(ii) the posts are set in straight lines,

(iii) the posts are set in the ground,

(iv) the wires are fixed to the posts. [9]

(b) **(i)** List **two** other types of fence (apart from post and wire).

(ii) State a use for each type of fence listed in **(b)(i)** and give a reason why it is suitable for this use. [6]

[Total: 15]

9 **(a)** For a named type of farm livestock:

(i) state the type of livestock;

(ii) describe the features you should look for when selecting a female animal for breeding;

(iii) describe signs that the animal is on heat;

(iv) describe signs that the animal is ready to give birth. [11]

(b) Outline the advantages of using artificial insemination (AI), in livestock breeding. [4]

[Total: 15]

10 For the cultivation of a crop that you have studied,

(i) state the name of the crop,

and describe

(ii) preparation of the soil for sowing or planting,

(iii) timing of sowing or planting,

(iv) spacing,

(v) preparation of the crop for market. [15]

[Total: 15]

11 In maintaining the health of livestock, explain the importance of:

(i) controlling parasites;

(ii) access to clean water;

(iii) controlling flies;

(iv) clean housing;

(v) a balanced ration. [15]

[Total: 15]

12 **(a)** With the aid of a labelled diagram, describe the construction of a storage dam across a small river. [6]

(b) **(i)** Describe one method of crop irrigation, including the source of the water and the way that the water is delivered to the crop.

(ii) Outline the advantages and disadvantages of irrigating crops. [9]

[Total: 15]

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