



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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AGRICULTURE

5038/01

Paper 1

May/June 2011

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.

DO **NOT** WRITE IN ANY BARCODES.

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 **16** printed pages.



Section A

Answer **all** the questions.For
Examiner's
Use

- 1 Fig. 1.1 shows three bags of fertiliser.

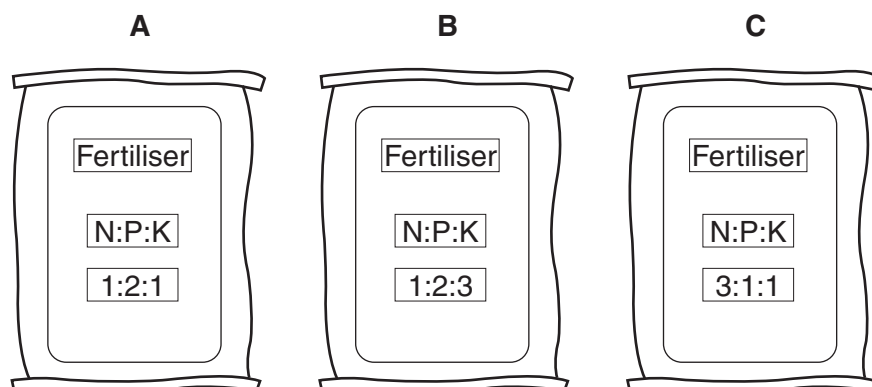


Fig. 1.1

- (a) What do the letters, N, P and K, stand for on the fertiliser bags?

N

P

K [2]

- (b) Tomato plants are grown for their fruits.
Which fertiliser, **A**, **B** or **C**, would be used to increase fruit production?
Give an explanation for your answer.

fertiliser

explanation

.....

..... [2]

(c) The fertilisers shown in Fig. 1.1 are all compound fertilisers.

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- (i) Give the name of a chemical that is used as a straight fertiliser.

.....

[1]

- (ii) Organic material such as farmyard (kraal) manure or compost can be used as a fertiliser.
Suggest **one** advantage and **one** disadvantage of using organic material as a fertiliser.

advantage

.....

disadvantage

.....[2]

[Total: 7]

- 2 Fig. 2.1 shows housing used for small livestock, such as goats.

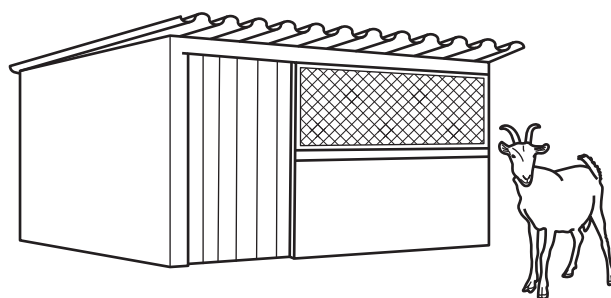


Fig. 2.1

For
Examiner's
Use

- (a) The roof is made of galvanised iron.

- (i) Suggest **one** advantage and **one** disadvantage of using this material for the roof.

advantage

.....

disadvantage

.....[2]

- (ii) Name an alternative material that could be used for the roof of the animal house. Give **one** advantage and **one** disadvantage of using this material.

roof material

advantage

.....

disadvantage

.....[2]

- (b) The window is made of wire mesh. This allows for ventilation. State **one** reason why ventilation is important in an animal house.

.....

.....[1]

- (c) List **three** ways in which a farmer could prevent and control disease in livestock kept in the house.

*For
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Use*

1

.....

2

.....

3

.....[3]

[Total: 8]

- 3 Fig. 3.1 shows two tractors, **A** and **B**, being used on sloping ground. The diagram shows them from the front.

For
Examiner's
Use

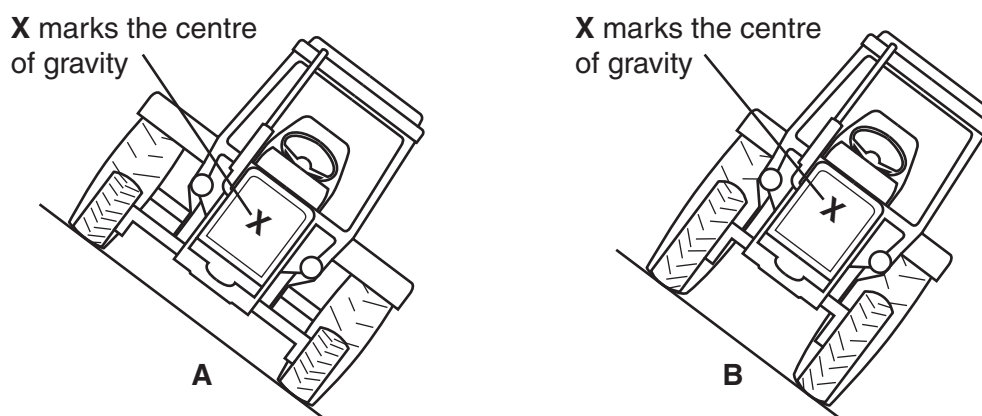


Fig. 3.1

- (a) Using the diagrams in Fig. 3.1, explain why tractor **B** is **more likely** to overturn than tractor **A**.

.....

 [3]

- (b) Sloping land can be ploughed using animals. Some farmers use animals, rather than tractors, to pull farm implements on **flat** land. Suggest **two** reasons, other than cost, for this.

1

 2
 [2]

- (c) Sloping land, used to cultivate crops, is often easily eroded. Soil is washed down the slope when heavy rain falls.

Describe and explain **two** ways in which this erosion can be reduced.

For
Examiner's
Use

1

.....

.....

2

.....

.....[4]

[Total: 9]

- 4 An experiment was carried out to find the effect of an insecticide on an insect pest that attacks cereal crops.

For
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- The crop was divided into two equal-sized plots.
- One plot was sprayed with insecticide but the other was left untreated.
- Each plot had the same pest population when the insecticide was applied.
- Pest numbers were counted each week after spraying.

The results are shown in Fig. 4.1.

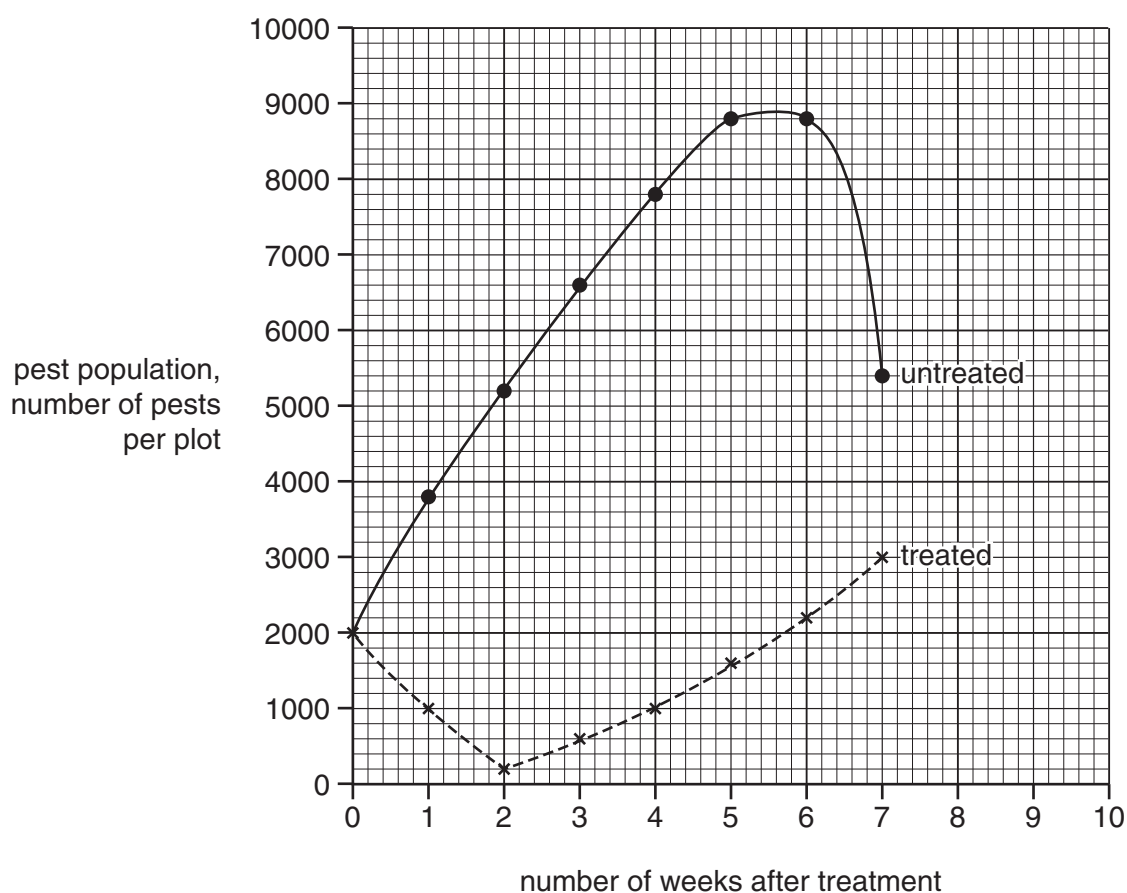


Fig. 4.1

- (a) (i) What was the pest population on each plot at the start of the experiment?

.....

[1]

- (ii) What was the pest population on each plot three weeks after the start of the experiment?

untreated plot

treated plot

[2]

- (b) (i) Suggest why the pest population fell after week 6 on the untreated plot.

.....
 [1]

- (ii) Using information from Fig. 4.1, describe what happened to the pest population on the treated plot and suggest an explanation for this.

description

.....

.....

explanation

..... [4]

- (iii) Suggest **one** way in which the insecticide treatment could be made more effective.

.....

..... [1]

- (c) Fig. 4.2 shows a sprayer used to apply an insecticide.



Fig. 4.2

State **two** precautions that should be taken by people, using the sprayer, to protect themselves when applying an insecticide in this way.

1

.....

2

..... [2]

[Total: 11]

- 5 A seed company produces an F_1 hybrid strain of maize by cross-pollinating two pure strains. Fig. 5.1 shows this.

For
Examiner's
Use

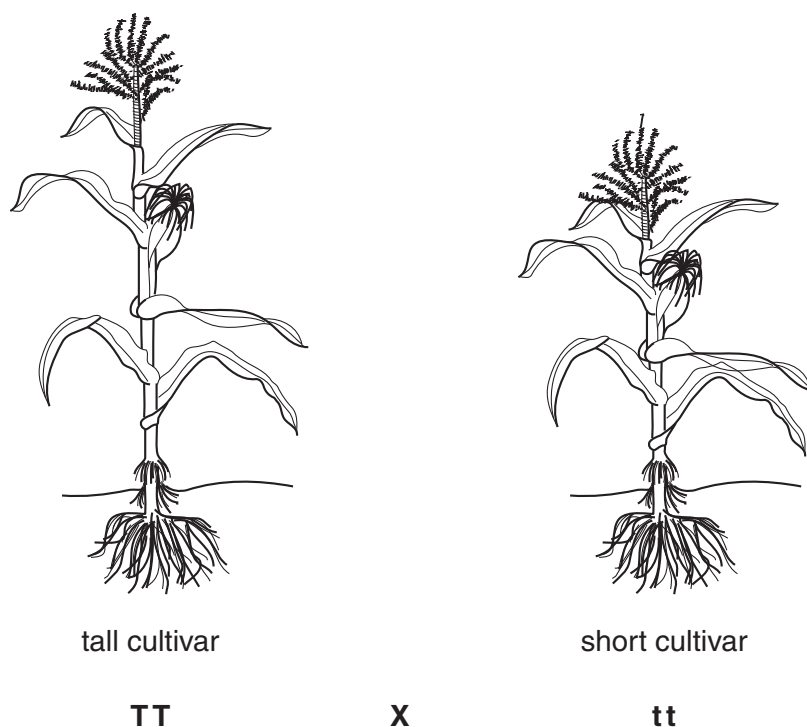


Fig. 5.1

- (a) Give the genotype of the F_1 hybrid seed.

.....

[1]

- (b) A farmer sows the F_1 hybrid seed. He then saves seed from these plants. This is F_2 seed.
When he sows the F_2 seed, the plants that grow are not all the same height.
Using a genetic diagram, explain a possible reason for this.

.....

.....[3]

- (c) (i) Suggest **one** advantage of using F_1 hybrid seed.

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

- (ii) Suggest **one** advantage of using the F_2 seed.

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

[Total: 6]

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- 6 Fig. 6.1 is a diagram of the digestive system of a chicken.

For
Examiner's
Use

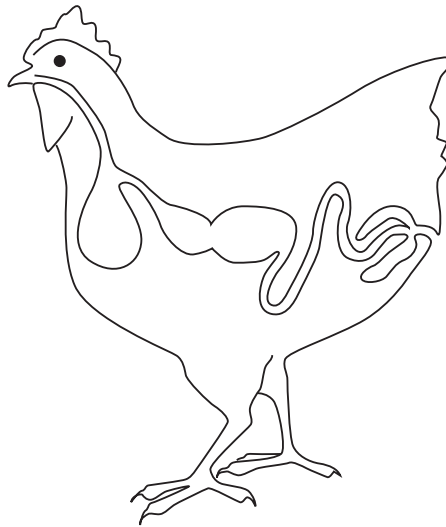


Fig. 6.1

- (a) (i) On Fig. 6.1 label

- the crop,
- the gizzard.

[1]

- (ii) Describe how the gizzard is adapted to carry out its function.

.....

.....

..... [2]

(b) Fig. 6.2 shows the digestive system of a horse.

For
Examiner's
Use

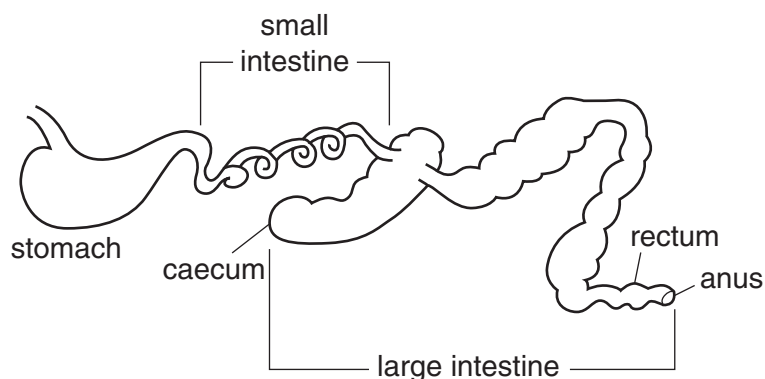


Fig. 6.2

Horses are herbivores with a similar diet to ruminants, such as cattle. The caecum contains bacteria that digest cellulose.

Fig. 6.3 shows the digestive system of a ruminant.

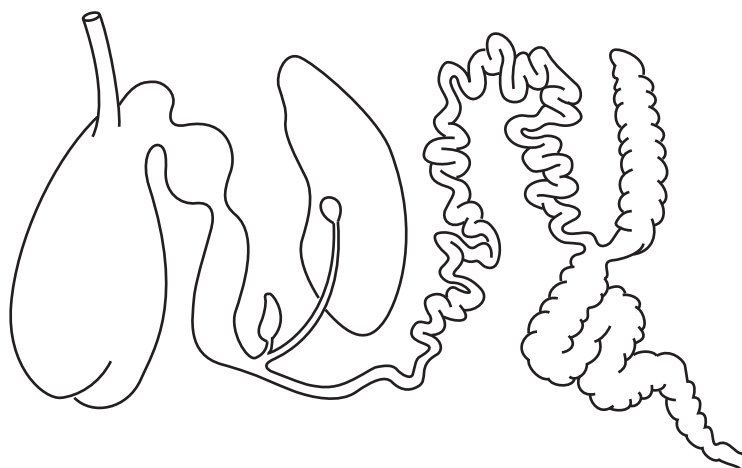


Fig. 6.3

(i) On Fig. 6.3 label with **X** the structure that performs the same role as the caecum. [1]

(ii) State the name of this structure.

.....

[1]

(iii) Explain why it is important that bacteria are present to digest cellulose.

.....

 [3]

[Total: 8]

- 7 Fig. 7.1 shows a tool used in preparing a seed bed.

For
Examiner's
Use

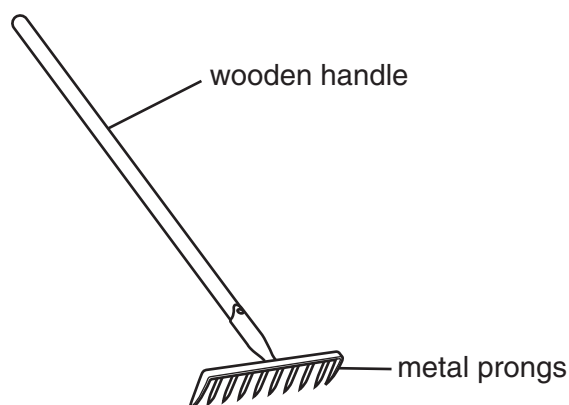


Fig. 7.1

- (a) The metal part of the tool is cleaned, dried and oiled after use, before being stored in a dry place.
Explain why these actions are necessary.

.....

.....

.....

.....[3]

- (b) Describe and explain the function of this tool in preparing a seed bed.

.....

.....

.....

.....[3]

[Total: 6]

Section B

Answer any **three** questions.

Write your answers on the separate paper provided.

- 8 (a)** For a crop of local importance in your area
- (i) state the name of the crop,
 - (ii) describe the preparation of the soil for sowing or planting. [4]
- (b)**
- (i) Explain why weed control in crops is important. [6]
 - (ii) Outline methods by which weeds may be controlled in a crop. [5]
- [Total: 15]**
-
- 9 (a)** Explain what is meant by the terms
- (i) crop rotation,
 - (ii) mixed farming,
 - (iii) monoculture. [6]
- (b)** Describe the advantages of
- (i) crop rotation,
 - (ii) mixed farming. [9]
- [Total: 15]**
-
- 10 (a)** In managing pasture for grazing animals, explain how and why
- (i) a good cover of palatable grasses is maintained,
 - (ii) soil erosion is avoided,
 - (iii) the spread of weeds is controlled. [9]
- (b)** Explain how pasture usage can be improved by the use of fencing. [6]
- [Total: 15]**

11 (a) Describe the ways in which

- (i) water,
- (ii) mineral salts,

are taken up from the soil by plant roots. [9]

(b) Outline ways in which a farmer can encourage crop plants to develop good root systems. [6]

[Total: 15]

12 (a) For a type of farm livestock

- (i) state the name of the livestock,
- (ii) state the main product for which the livestock is kept,
- (iii) describe storage and processing of the product for marketing. [5]

(b) A diary of events can be kept for the breeding programme of livestock. Describe and explain the records that should be kept, for the livestock named in **(a)**, from the time of mating until the next mating. [10]

[Total: 15]