

Centre Number	Candidate Number	Name
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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

AGRICULTURE

0600/03

Paper 3

October/November 2005

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 in the spaces provided on the Question Paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.
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	

1 Table 1.1 shows the seasonal rainfall for an area over two years.

Table 1.1

Season	2003				2004			
	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter
Rainfall/mm	35	5	30	80	40	0	20	91

(a) (i) In which year was there the greater rainfall in this area?

.....

[1]

(ii) Use the data in Table 1.1 to complete the bar chart in Fig. 1.1.

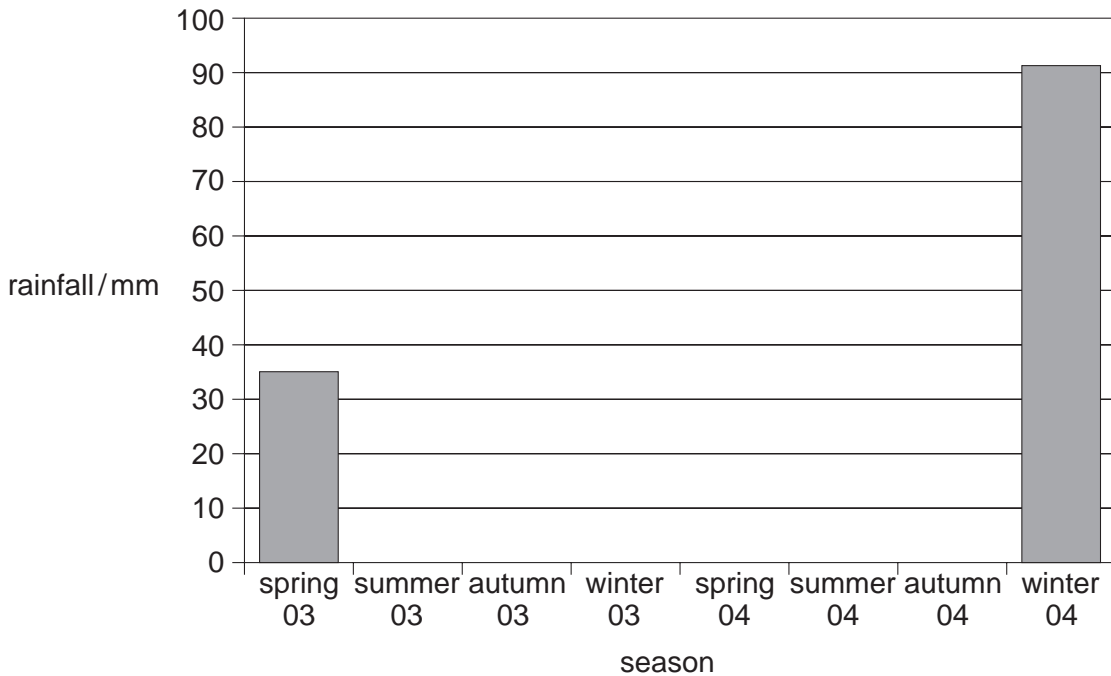


Fig. 1.1

[3]

(b) Water can be conserved using minimum tillage.

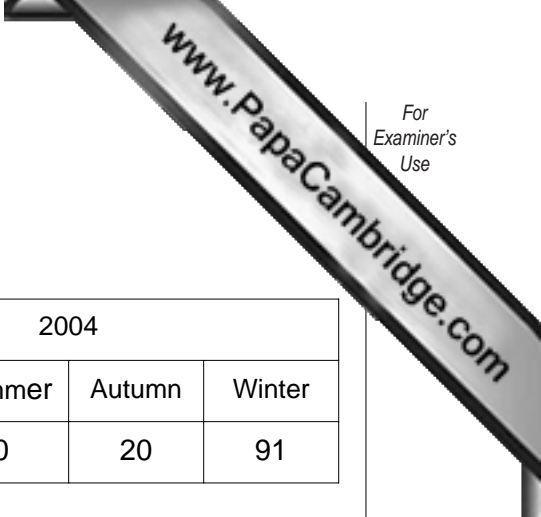
(i) Describe a method of minimum tillage.

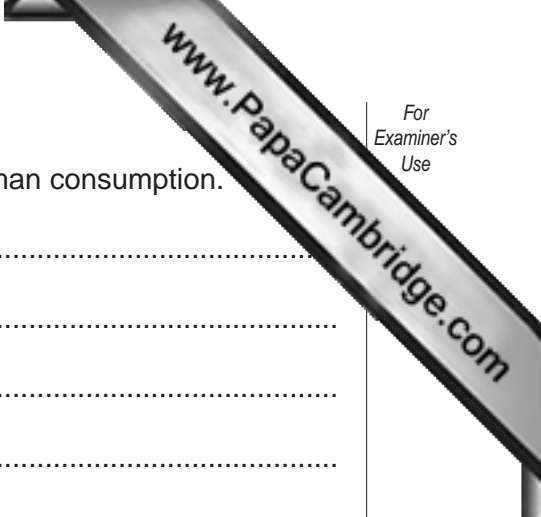
.....

 [2]

(ii) State **one** other method of water conservation.

..... [1]





(c) Explain how water from a river or well can be made fit for human consumption.

.....

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.....

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.....

.....[4]

(d) (i) Describe how rivers cause the physical weathering of rocks.

.....

.....

.....[1]

(ii) Explain how rain causes the chemical weathering of rocks.

.....

.....

.....[2]

[Total : 14]

2 Fig. 2.1 shows the effect of soil pH on the growth of a variety of soya bean.

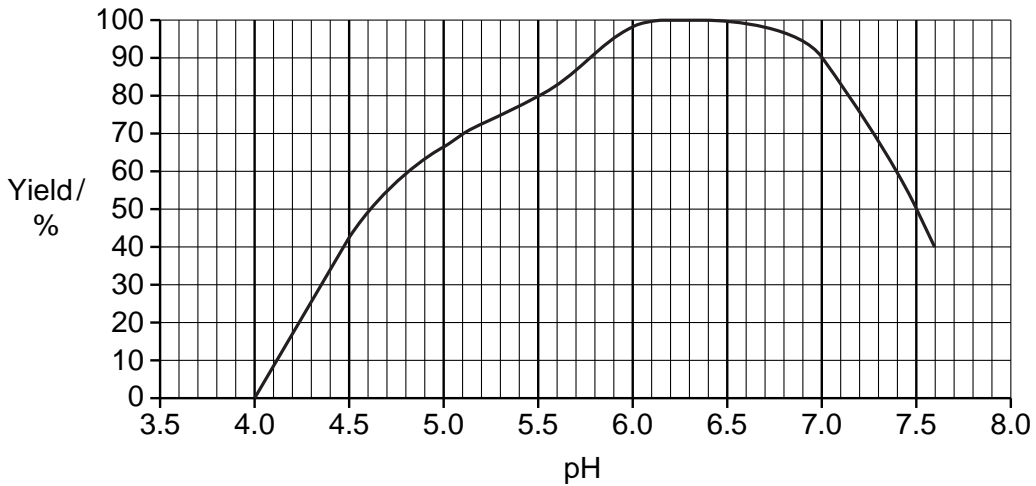


Fig. 2.1

(a) (i) What percentage yield of soya beans would be expected from a plot with pH 5.0?

..... [1]

(ii) What is the pH range in which this crop grows best?

..... [1]

(iii) Suggest why the crop produces lower yields below pH 6.

.....

 [2]

(iv) Describe how a farmer can increase the pH of such a soil.

.....

 [2]

(v) Suggest why sandy soils often have a low pH.

.....
 [1]

[Total : 7]

3 Fig. 3.1 shows the cross-section of a leaf.

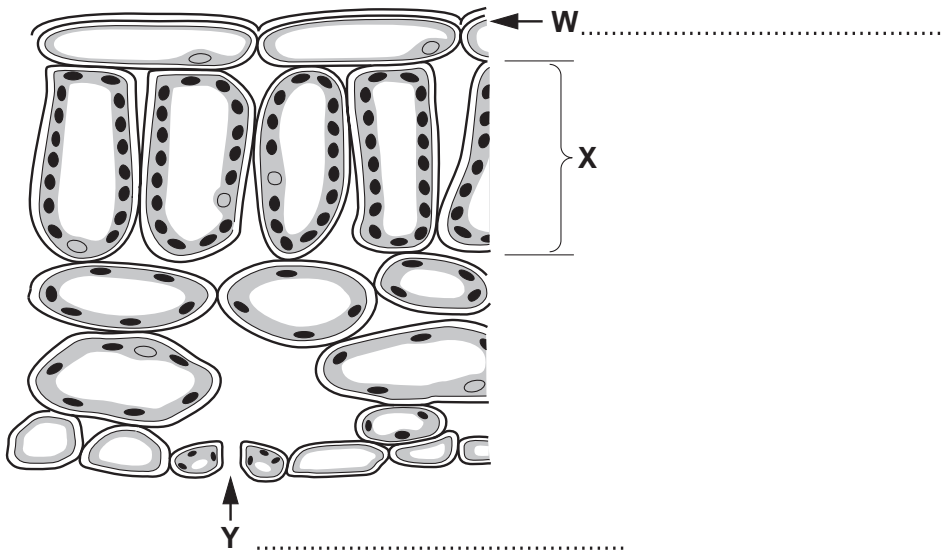


Fig. 3.1

(a) (i) On Fig. 3.1, name tissue **W** and structure **Y**. [2]

(ii) Describe the role of tissue **X** in photosynthesis.

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.....

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.....[4]

(b) Systemic pesticides can be sprayed on to the leaves of plants. Explain how such pesticides are spread through the plant.

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.....

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.....

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.....

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.....[4]

[Total : 10]

4 Fig. 4.1 shows land that is being cleared in preparation for farming.



Fig. 4.1

(a) (i) What other steps are needed to turn this area into farmland?

.....
.....
.....[2]

(ii) State **three** undesirable consequences of deforestation.

1.
.....
2.
.....
3.
.....[3]

- (b) Describe the cultivation of a **root crop** grown locally by completing Table 4.1.

Table 4.1

name of root crop	
soil preparation	
sowing/planting method	
fertiliser requirements	
method of weed control	
harvesting method	

[5]

- (c) State **two** characteristics of a cultivar of a named **cereal crop** that would make it suitable for your area.

.....

.....[2]

[Total : 12]

5 Fig. 5.1 shows part of a leaf attacked by a pest.

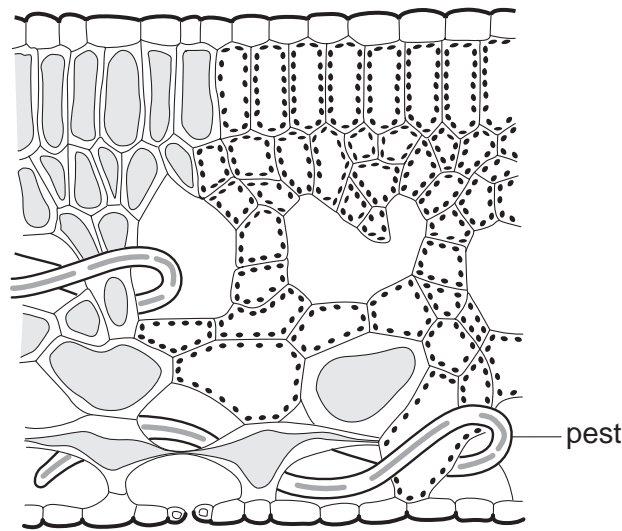


Fig. 5.1

(a) (i) What kind of pest is shown in Fig. 5.1?

.....[1]

(ii) Explain why crop rotation would help control a pest like the one in Fig. 5.1.

.....

[2]

(b) Name a viral disease of a crop you have studied.

crop

viral disease

(i) How does the crop become infected?

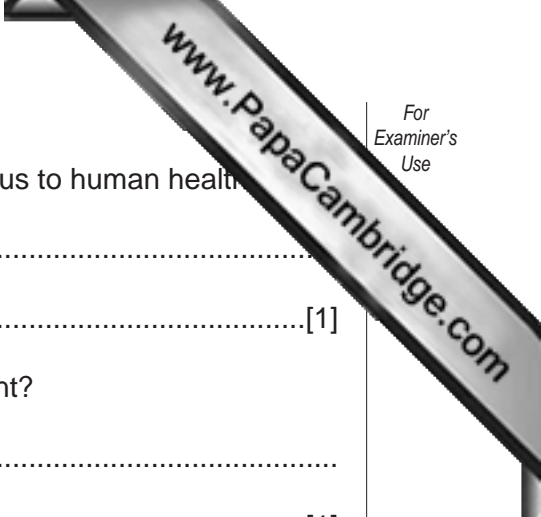
.....[1]

(ii) Describe the symptoms of infection.

.....[1]

(iii) State a method of prevention of infection.

.....[1]



(c) (i) Describe how the use of farm chemicals can be hazardous to human health.

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

(ii) How can the use of farm chemicals harm the environment?

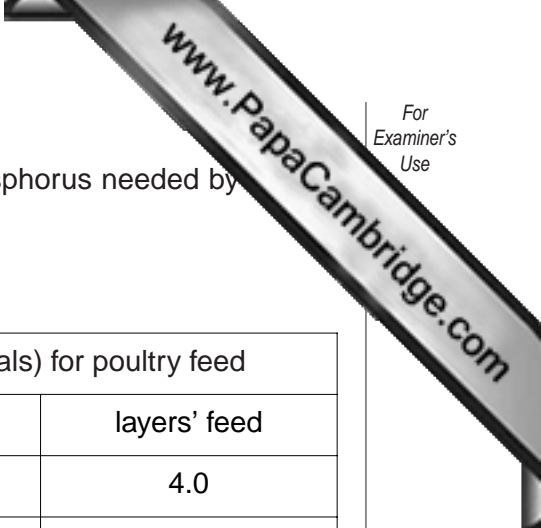
.....
.....[1]

(iii) State **one** advantage of using a named farm chemical over cultural methods.

Name

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

[Total : 9]



- 6 Table 6.1 shows the recommended amounts of calcium and phosphorus needed by growers and laying hens.

Table 6.1

recommended % levels of calcium and phosphorus (minerals) for poultry feed			
mineral	chicks' feed	growers' feed	layers' feed
calcium	0.8	1.1	4.0
phosphorus	0.45	0.4	0.32

- (a) (i) Suggest a reason for the differences between the amounts of calcium needed by chicks and growers.

.....[1]

- (ii) Suggest a reason for the increased demand for calcium by layers.

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

- (b) Explain why the rations required by an adult chicken can be different at different times.

.....
.....
.....
.....
.....[3]

- (c) Anthrax and Newcastle disease are examples of *notifiable diseases*. Explain what is meant by the term notifiable disease.

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.....
.....
.....
.....[3]

[Total : 8]

7 In rabbits, an allele for black hair (**B**) is dominant to an allele for white hair (**b**). Heterozygous (**Bb**) rabbits are crossed.

(a) In the space below, calculate and predict the results of this cross.

[3]

(b) Describe how **artificial selection** can improve the yield of a named livestock.

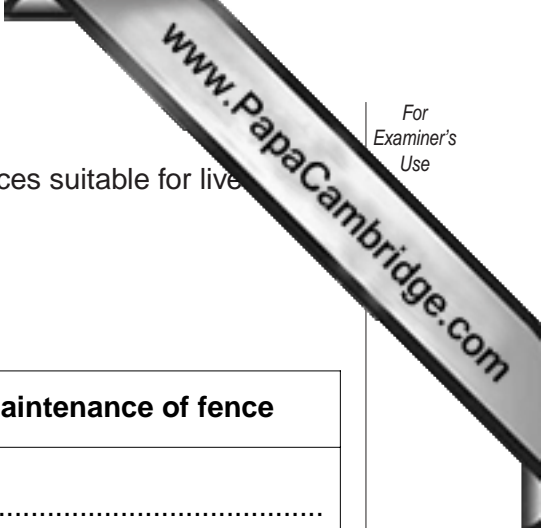
Livestock

.....
.....
.....
.....[3]

(c) How can the control of breeding cycles increase the yield of livestock?

.....
.....
.....[2]

[Total : 8]



8 Table 8.1 describes the advantages and maintenance of three fences suitable for live

(a) Complete Table 8.1.

Table 8.1

fence type	advantage	maintenance of fence
hedge	locally available
post and wire	creosote the posts
electric wire	animals do not touch fence

[3]

(b) Explain the factors that determine the site for a new farm building suitable for livestock.

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[5]

[Total : 8]

- 9 Fig. 9.1 shows all the financial records for a cereal farm throughout the year.

date	item	amount
01/01/05	rent paid	\$ 20.00
02/01/05	purchase of seeds	\$ 36.00
04/01/05	wages of farm workers	\$150.00
09/01/05	purchase of fertiliser	\$ 47.00
08/02/05	purchase of hoe	\$ 8.00
04/03/05	wages of farm workers	\$150.00
01/04/05	rent paid	\$ 20.00
05/05/05	wages of farm workers	\$150.00
01/07/05	rent paid	\$ 20.00
03/07/05	wages of farm workers	\$150.00
03/09/05	sale of crop	\$385.00
04/09/05	wages of farm workers	\$250.00
05/09/05	sale of crop	\$275.00
18/09/05	sale of crop	\$515.00
01/10/05	rent paid	\$ 20.00

Fig. 9.1

Using the list of financial information, prepare a balance sheet for the farm in the space below.

[4]

[Total : 4]

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