

Candidate Name \_\_\_\_\_

| Centre Number | Candidate Number |
|---------------|------------------|
|               |                  |

**International General Certificate of Secondary Education**  
**CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
**AGRICULTURE**  
**PAPER 3**

**0600/3**

**OCTOBER/NOVEMBER SESSION 2002**

1 hour 15 minutes

Additional materials:  
Answer paper

**TIME** 1 hour 15 minutes

**INSTRUCTIONS TO CANDIDATES**

Write your name, Centre number and candidate number in the spaces at the top of this page and on all separate answer paper used.

**Section A**

Answer **all** questions.

Write your answers in the spaces provided on the question paper.

**Section B**

Answer any **two** questions.

Write your answers on the separate answer paper provided.

At the end of the examination,

1. fasten all separate answer paper securely to the question paper;
2. enter the numbers of the Section B questions you have answered in the grid below.

**INFORMATION FOR CANDIDATES**

The intended number of marks is given in brackets [ ] at the end of each question or part question.

You are advised to spend no longer than 30 minutes on Section A.

| FOR EXAMINER'S USE |  |
|--------------------|--|
| <b>Section A</b>   |  |
| <b>Section B</b>   |  |
|                    |  |
|                    |  |
| <b>TOTAL</b>       |  |

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**This question paper consists of 6 printed pages and 2 blank pages.**



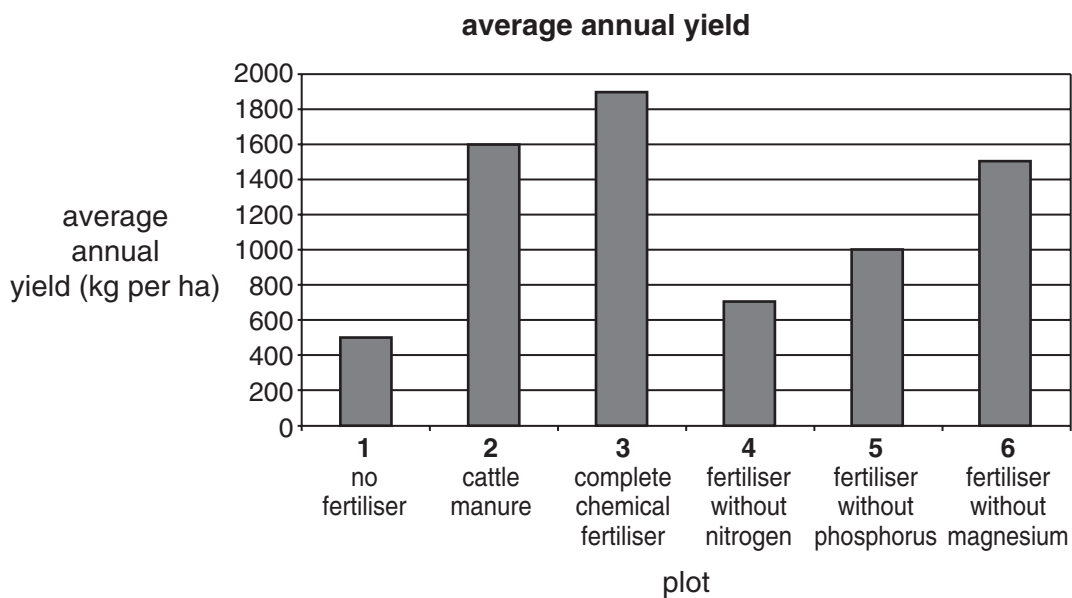
**Section A**

Answer **all** the questions.

Write your answers in the spaces provided.

- 1 (a)** 6 plots were sown with wheat each year for 8 years.  
 Plot 1 was given no manure or fertiliser.  
 Plot 2 was given cattle manure each year.  
 Plot 3 was given a complete chemical fertiliser each year.  
 Plots 4 to 6 were given fertiliser each lacking one element.

The average annual yields are shown in Fig. 1.1.



**Fig. 1.1**

- (i) What is the average annual yield of the plot given cattle manure?  
 ..... [1]
- (ii) Which treatment produced the greatest average annual yield?  
 ..... [1]
- (iii) Describe the appearance of the crops grown without magnesium.  
 .....  
 ..... [1]

(iv) Describe the appearance of the crops grown without nitrogen.

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

(v) Explain how legumes can improve the fertility of a plot.

.....  
.....  
.....  
..... [4]

(b) (i) State two advantages of using cattle manure rather than chemical fertilisers.

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

(ii) Suggest **one** problem of using cattle manure as a fertiliser.

..... [1]

[Total : 11]

2 Fig. 2.1 shows a cross-section of a leaf.

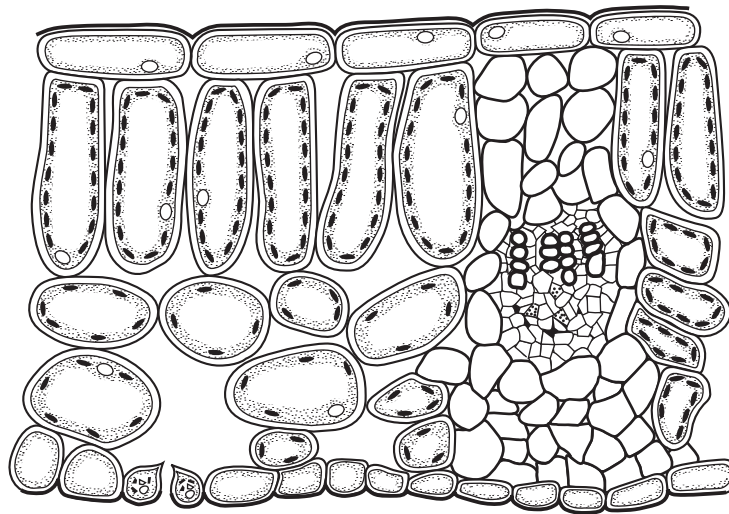


Fig. 2.1

(a) On Fig. 2.1,

- (i) label with the letter **A**, cells that manufacture food;
- (ii) label with the letter **B**, an area in which gases are stored;
- (iii) label with the letter **C**, cells that carry water to the leaf.

[3]

(b) (i) Write a word equation to describe photosynthesis.

[2]

(ii) What is the function of chlorophyll in the process of photosynthesis?

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

(c) What is meant by *translocation*?

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

(d) Describe how the plant uses the products of photosynthesis.

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

[Total : 11]

3 (a) What is meant by *asexual reproduction*?

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

(b) A farmer harvests a crop of potatoes.

Explain how the farmer might decide upon a price for the crop.

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

(c) Suggest three factors that will affect the demand for the crop.

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

[Total : 8]

**Section B**

Answer any **two** questions.

Write your answers on the separate answer paper provided.

Use labelled or annotated diagrams where they help to make your answers more easily understood.

- 4 (a) Describe the symptoms of **one** disease of poultry. [5]  
(b) How can the spread of this disease be prevented? [7]  
(c) Describe the veterinary services in your area. [3]  
[Total : 15]
- 5 (a) Describe the water cycle. [10]  
(b) How can the following affect the growth of crops?  
(i) windy conditions  
(ii) low temperatures  
[5]  
[Total : 15]
- 6 (a) Use a labelled diagram to describe the structure of the alimentary canal of a **named** non-ruminant (**not** poultry). [9]  
(b) Explain the role of microorganisms and enzymes in the process of digestion in a ruminant. [6]  
[Total : 15]
- 7 (a) What is meant by the terms *chromosome* and *genotype*? [4]  
(b) Describe how artificial selection could be used to improve a **named** crop. [4]  
(c) Construct a full genetic diagram that shows how a 3:1 ratio can be obtained from the offspring of homozygous parents. [7]  
[Total : 15]



