International General Certificate of Secondary Education

CAMBRIDGE INTERNATIONAL EXAMINATIONS

AGRICULTURE   **0600/3**

PAPER 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.

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

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Local Examinations Syndicate

[Turn over

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.

average annual yield
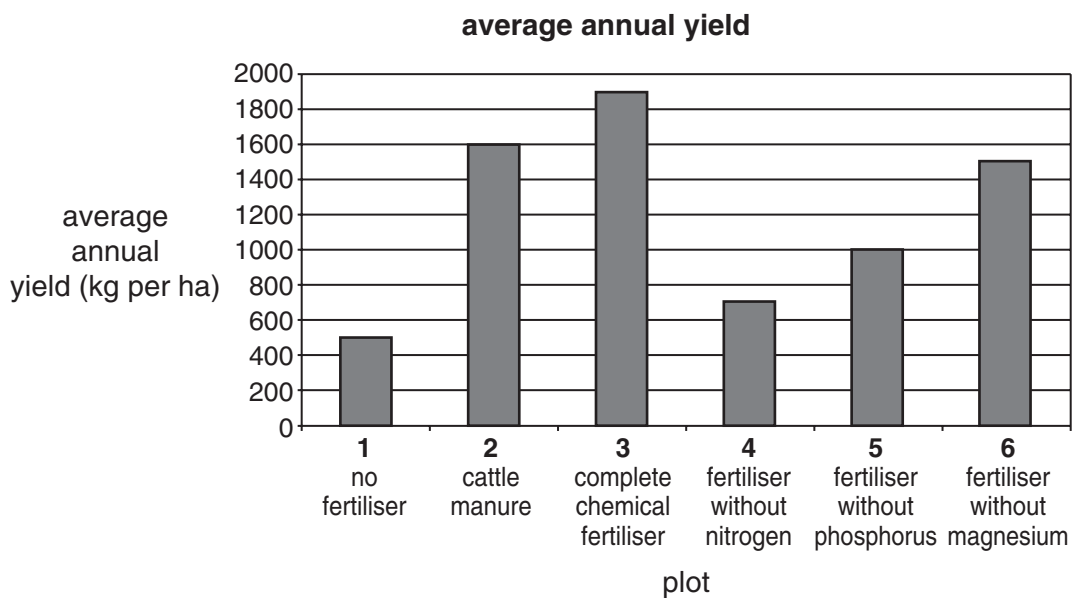
Fig. 1.1

(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]

[Turn over

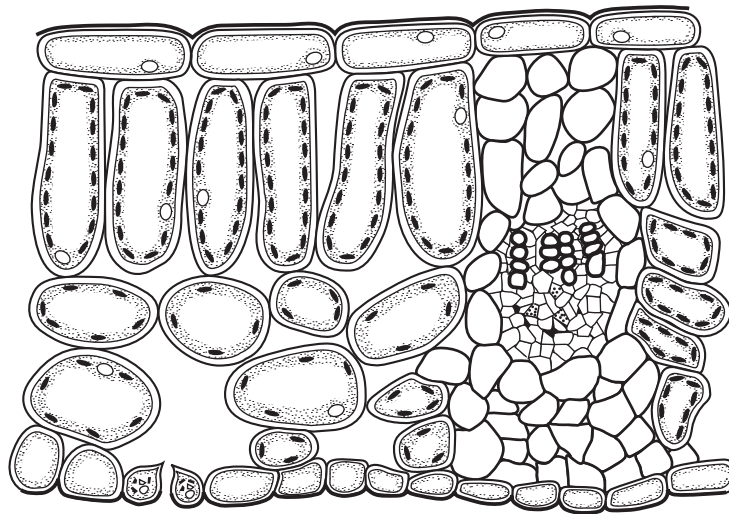**2** Fig. 2.1 shows a cross-section of a leaf.

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]

[Turn over

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]

7

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