UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

6894870908

AGRICULTURE **5038/01**

Paper 1 **October/November 2008**

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 **13** printed pages and **3** blank pages.

Section A

Answer **all** the questions

For Examiner's Use

1 Fig 1.1 shows a sample of soil that has been shaken with water and allowed to settle.

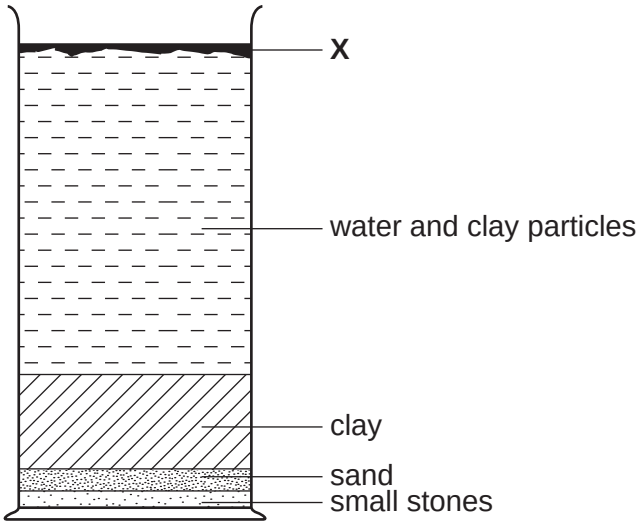


Fig. 1.1

(a) (i) What is substance **X**?

..... [1]

(ii) How is substance **X** formed?

.....

.....

..... [2]

(iii) Give **three** reasons why substance **X** is important in the soil.

1 .....

2 .....

3 ..... [3]

(b) Suggest **one** way in which the quantity of substance **X** in the soil can be increased.

.....

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

[Total: 7]

For Examiner's Use

2 Fig 2.1 shows the water cycle.

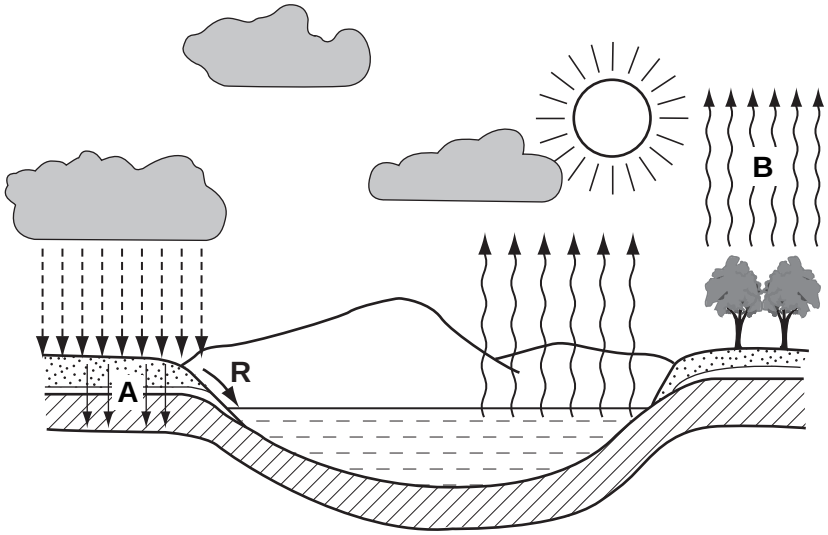


Fig. 2.1

(a) Give the names of the processes at **A** and **B**.

A .....

B ..... [2]

(b) (i) Process **R** is *run-off*.

State **one** reason why run-off is a problem for farmers.

.....

..... [1]

(ii) Describe **one** method by which run-off can be prevented.

.....

.....

..... [2]

[Total: 5]

For Examiner's Use

3 Fig. 3.1 shows a cross-section through the root of a plant.

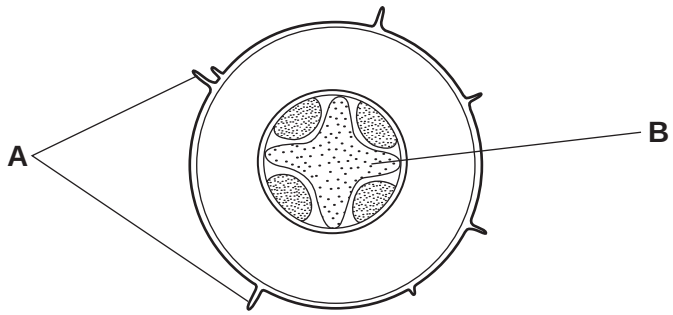


Fig. 3.1

(a) (i) What are the structures labelled **A**?

A .....

(ii) What is the tissue labelled **B**?

B ..... [2]

(b) (i) On Fig. 3.1, label with **M** the tissue through which mineral salts are carried through the plant. [1]

(ii) What is the name of the process by which water is absorbed by plant roots?

..... [1]

(iii) How does the uptake of water from the soil differ from the uptake of minerals from the soil?

.....

.....

..... [3]

[Total: 7]

For Examiner's Use

4 Fig. 4.1 shows the yield of a cereal crop grown at different nitrogen fertiliser applications.

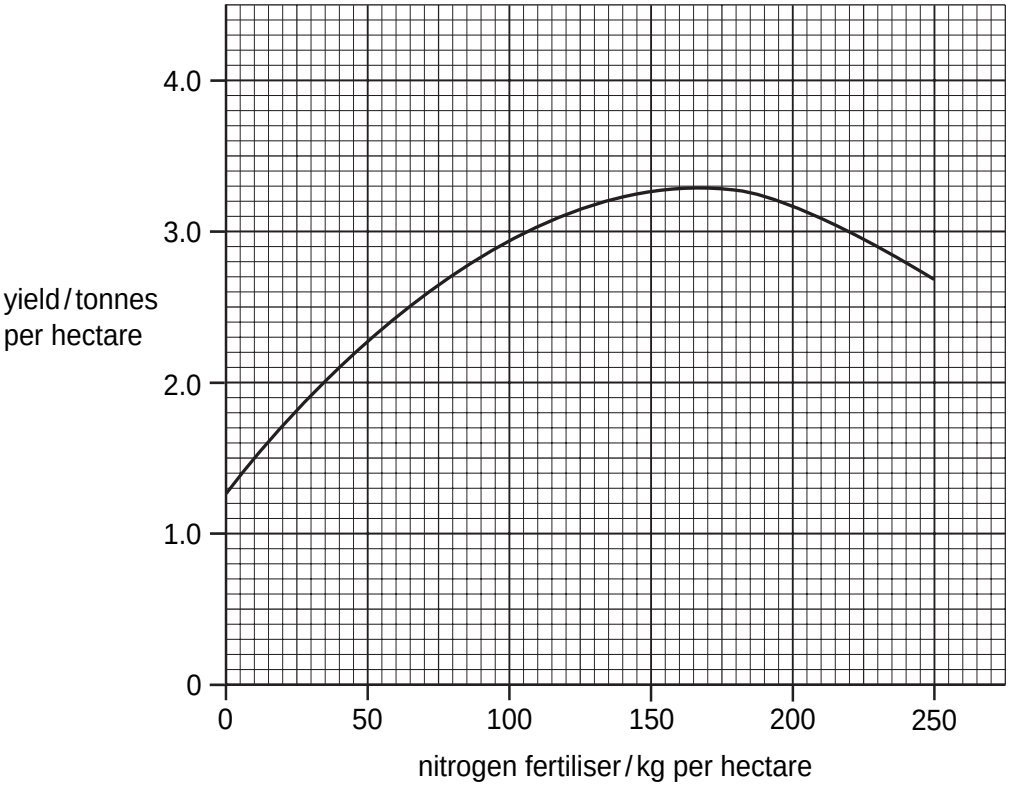


Fig. 4.1

(a) (i) What is the highest yield obtained?

..... [1]

(ii) What fertiliser application was needed to produce this yield?

..... [1]

(b) At higher fertiliser applications the yield decreases. Suggest **two** reasons for this.

1 .....

2 ..... [2]

For Examiner's Use

(c) Complete table 4.1 with details of **one** organic fertiliser and **one** inorganic fertiliser that can add nitrogen to soil.

Table 4.1

	organic fertiliser that increases soil nitrogen content	inorganic fertiliser that increases soil nitrogen content
name of fertiliser		
one advantage of using this type of fertiliser		
one disadvantage of using this type of fertiliser		

[6]

[Total: 10]

For Examiner's Use

5 Fig. 5.1 shows the reproductive system of a male mammal.

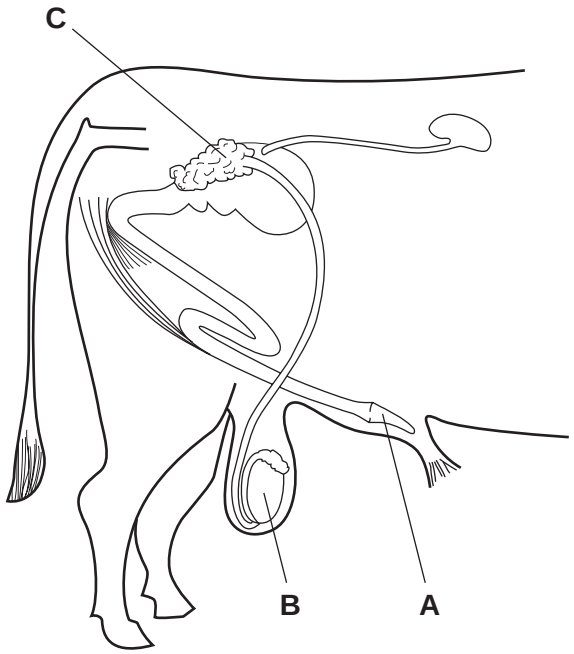


Fig. 5.1

(a) (i) What are the structures labelled **A**, **B** and **C**?

A .....

B .....

C ..... [3]

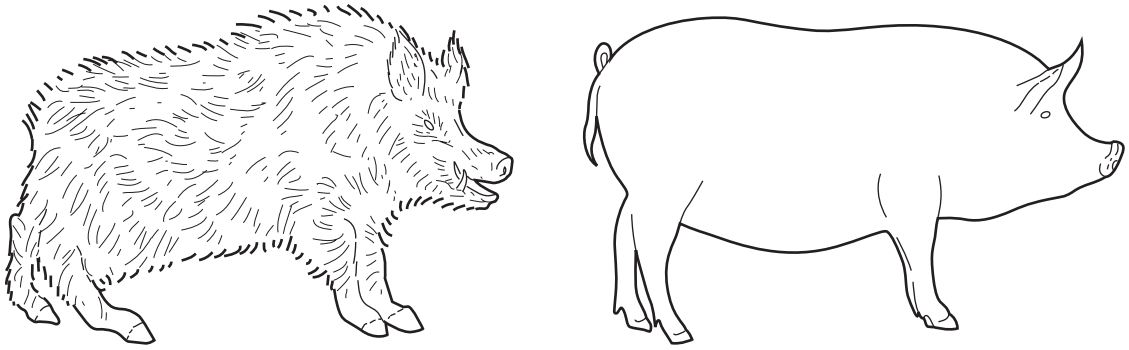
(ii) What is the function of structure **B**?

.....

..... [1]

For Examiner's Use

(b) Fig. 5.2 shows a wild boar and a domestic pig.



wild boar domestic pig

Fig. 5.2

(i) Outline the ways in which breeding from wild pigs could result in domestic breeds.

.....

.....

.....

.....

..... [3]

(ii) Explain how artificial insemination (AI) can be useful in improving livestock breeds.

.....

.....

.....

.....

..... [3]

[Total: 10]

For Examiner's Use

6 Fig. 6.1 shows the position of the valves and direction of movement of the piston in the cylinder of a four-stroke petrol engine.

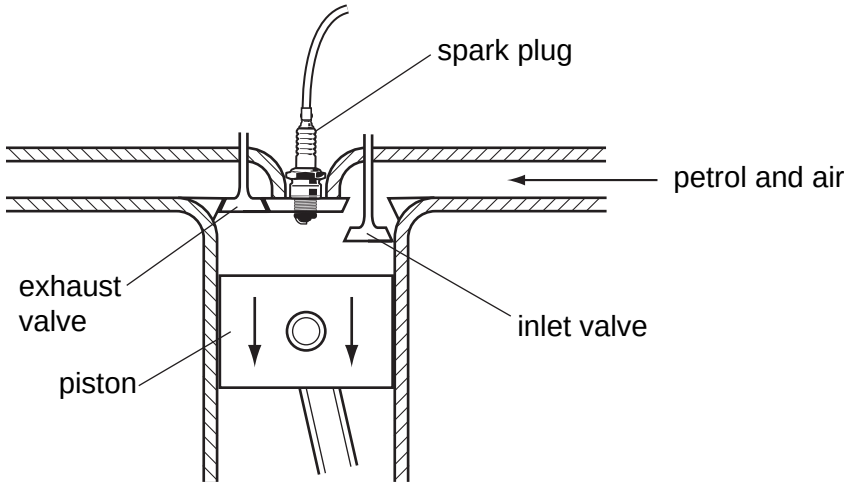


Fig. 6.1

(a) Complete table 6.1 with the valve positions and the direction of the piston during the four-stroke cycle.

Table 6.1

Stroke	Inlet valve	Exhaust valve	Direction of piston
induction	open	closed	downwards
compression			
ignition			
exhaust			

[3]

(b) Give **two** advantages and **two** disadvantages of using a tractor rather than animals to pull farm implements.

Advantage 1 .....

.....

Advantage 2 .....

.....

Disadvantage 1 .....

.....

Disadvantage 2 .....

..... [4]

[Total: 7]

For Examiner's Use

7 **(a)** For an area of pasture, what is meant by:

(i) *the carrying capacity*;

.....

..... [1]

(ii) *the stocking rate*.

.....

..... [1]

(b) List **two** problems caused by overstocking pasture.

1 .....

2 ..... [2]

(c) Use the diagram in Fig. 7.1 to describe a rotational grazing system.

For Examiner's Use

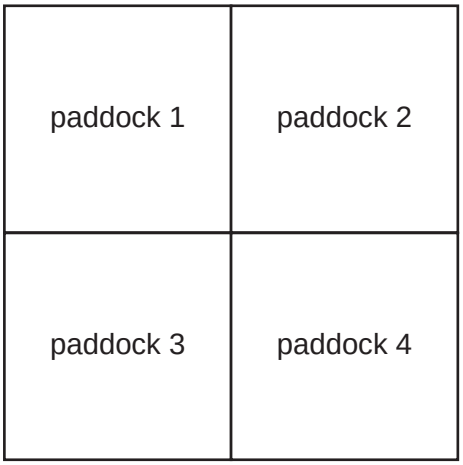


Fig. 7.1

.....

.....

.....

.....

.....

.....

..... [5]

[Total: 9]

Section B

Answer any **three** questions.
Write your answers on the separate paper provided.

8 **(a)** Using **named examples**, explain briefly how insects:

(i) can be useful for crops;

(ii) can be crop pests. [6]

(b) For a **named** insect pest of crops describe:

(i) the life cycle of the insect, explaining how it damages the crop;

(ii) methods of prevention and control. [9]

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

(a) state **one** external parasite that affects these animals; [1]

(b) outline the life history of this parasite; [5]

(c) describe the symptoms shown by an animal affected by this parasite; [3]

(d) outline methods of prevention and control of this parasite. [6]

10 In some countries most of the population live in cities. People may have to spend most of their income on food. Many people who live in cities are now keeping small livestock, such as chickens, rabbits or goats, on waste land.

(a) Suggest the benefits of keeping small livestock in this situation. [5]

(b) Suggest the problems that might arise from keeping small livestock in a city. [6]

(c) Why would it be difficult to keep large animals, such as cattle, in this situation? [4]

11 Describe, in detail, the construction of a fence made of wooden posts and wire, to make an enclosure for cattle.

In your description include:

- treatment of the wooden posts;
- construction of corners;
- how the posts are lined up;
- how posts are set in the ground;
- how the wires are attached;
- how the wires are tightened;
- the tools you would use for each part of the construction.

You may use diagrams to make your answer clearer. [15]

12 Many farmers use and store farm chemicals such as herbicides.
Describe and explain the precautions that should be taken when

(a) using farm chemicals;

(b) storing farm chemicals. [15]

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