

Centre Number	Candidate Number	Name
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CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

AGRICULTURE

5038/01

Paper 1

October/November 2003

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, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

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.

At the end of the examination, fasten all your work securely together.
Enter the numbers of the Section B questions you have answered in the grid below.

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

If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

For Examiner's Use	
Section A	
Section B	/
Total	

Section A

Answer all the questions.

Write your answers in the spaces provided.

1 Fig. 1.1 shows the reproductive system of a female farm animal.

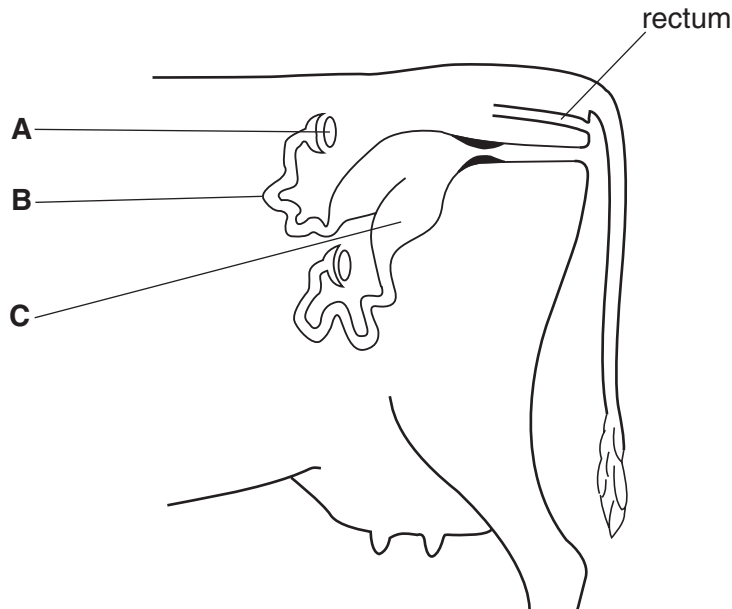


Fig. 1.1

(a) Name the structures **A**, **B** and **C**.

A

B

C

[3]

(b) On Fig. 1.1, mark with an **X** where fertilisation occurs.

[1]

(c) State the functions of the ovary.

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

(d) Explain what is meant by

lactation

.....

weaning

.....[2]

2 (a) Fig. 2.1 shows the water cycle.

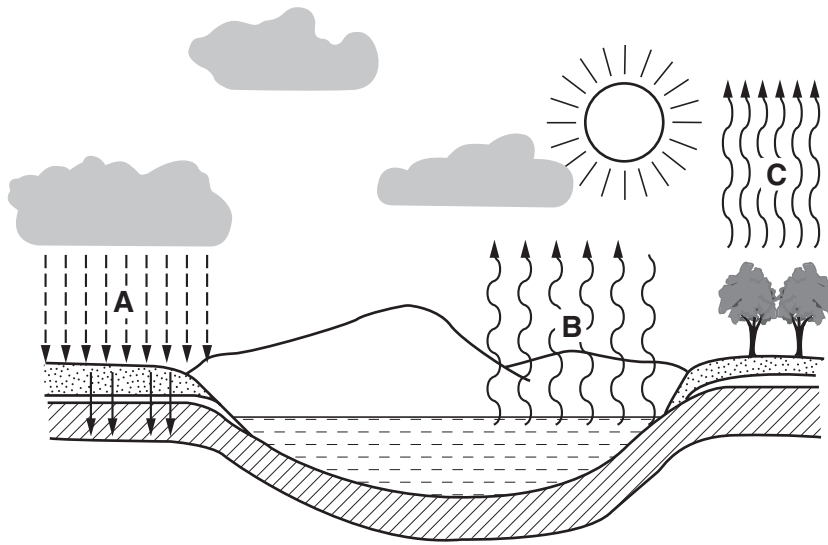


Fig. 2.1

Name the processes **A**, **B** and **C**.

A

B

C

[3]

(b) Fig. 2.2 shows the effects of a mulch on the rate at which water soaks into the soil

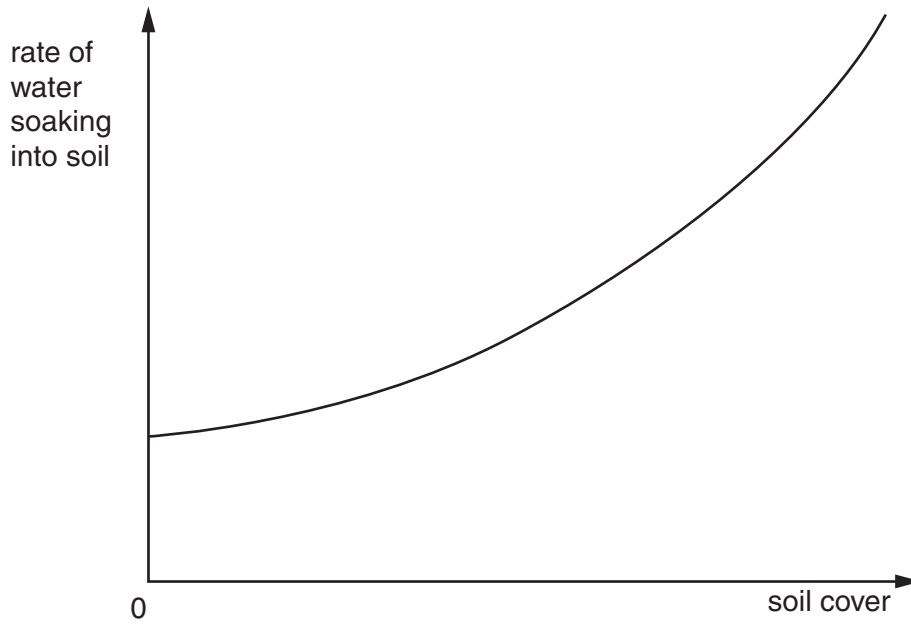


Fig. 2.2

(i) State what happens to the rate of water soaking into the soil as the soil cover by the mulch increases.

.....[1]

(ii) Suggest the reasons for this.

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

(c) In an area where daytime temperatures are high, a mulch was spread immediately after sowing some seeds. As a result, germination rate improved.

Suggest why this occurred.

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

[Total : 8]

3 (a) Fig. 3.1 shows the tasks involved in cleaning a livestock house before it is re-stocked.

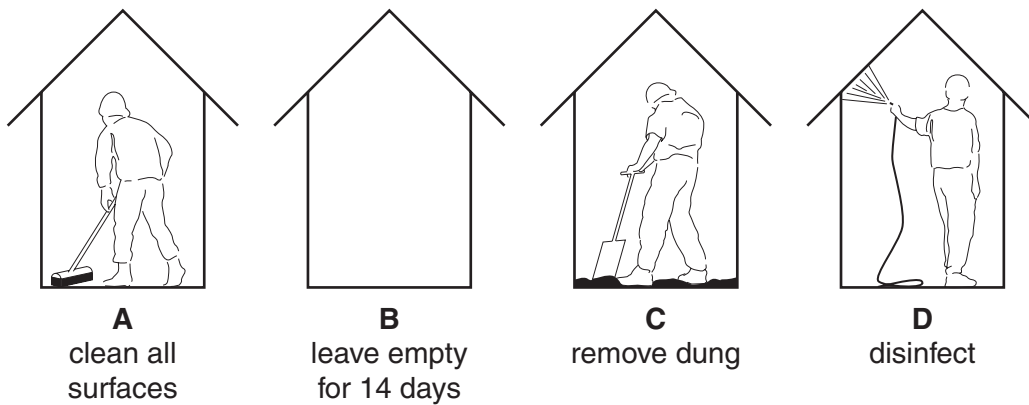


Fig. 3.1

List the letters for tasks in the order in which they should be carried out.

..... [1]

(b) (i) State two signs that should be looked for when checking animals for disease.

1.

2. [2]

(ii) State two actions that should be taken when disease is suspected.

1.

2. [2]

(c) Parasites can cause serious problems in livestock.

(i) For a **named** type of livestock, name a parasite that affects it.

type of livestock

parasite [1]

(ii) List three problems caused to the livestock by this parasite.

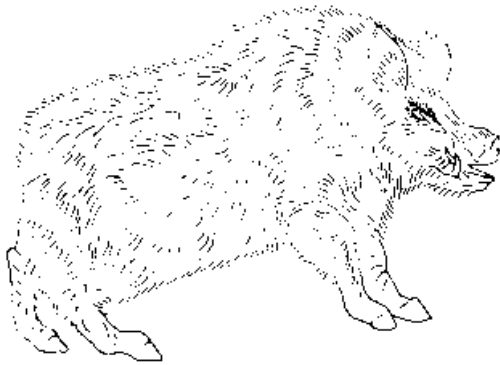
1.

2.

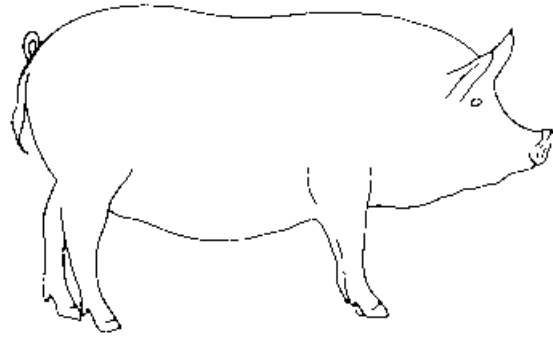
3. [3]

[Total : 9]

4 (a) Fig. 4.1 shows a wild boar and a domestic pig.



wild boar



domestic pig

Fig. 4.1

(i) The domestic pig has been developed from the wild boar.

What is the process by which this has been achieved?

.....[1]

(ii) A farmer wants to use this process to improve the quality of a flock of goats.

How could record keeping help him to do this?

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

(b) Fig. 4.2 shows two maize cobs. One has yellow seeds, the other has white seeds.



Yy

yellow seeds



yy

white seeds

Y = allele for yellow seeds
y = allele for white seeds

Fig. 4.2

Use the information in Fig. 4.2 to explain what is meant by

genotype,

.....

.....

phenotype.

.....

.....[4]

[Total : 8]

5 (a) Fig. 5.1 shows the sequence of cleaning the metal part of a spade.

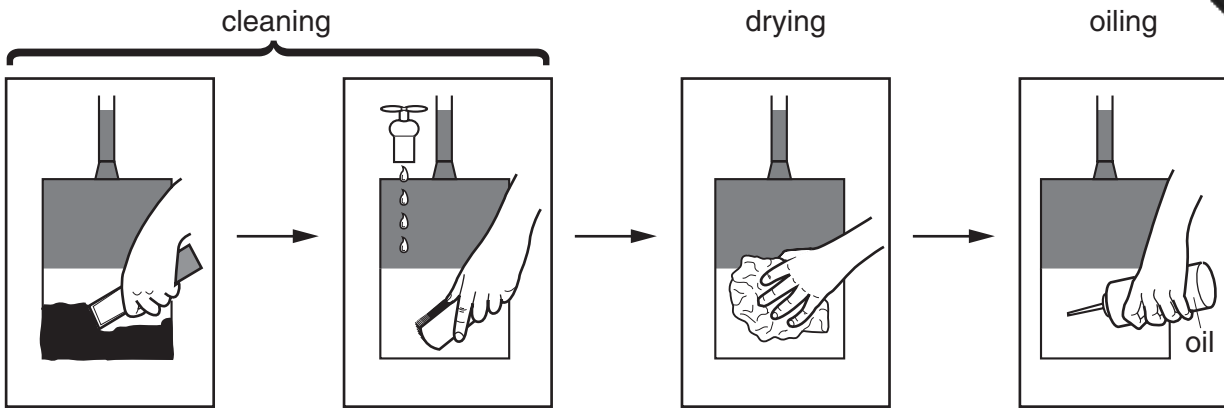


Fig. 5.1

(i) State the reasons for the stages in the cleaning process.

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

(ii) The spade has a wooden handle.

Describe and explain the maintenance needed for the handle.

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

(b) Fig. 5.2 shows three tools used to construct a wooden house for livestock.

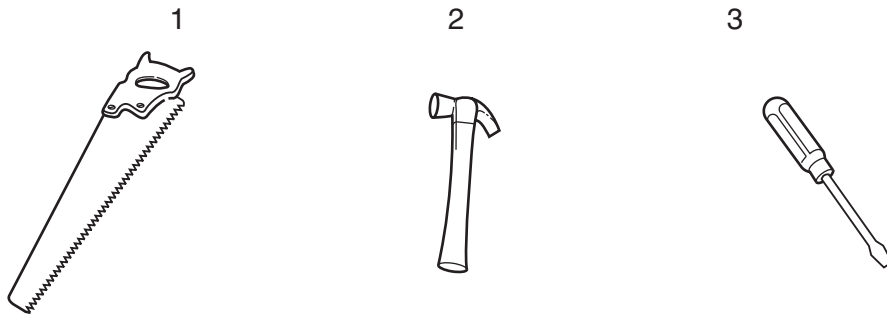


Fig. 5.2

State the use of each tool in making the livestock house.

tool 1

tool 2

tool 3[3]

[Total : 8]

6 (a) Fig. 6.1 shows part of a root in the soil.

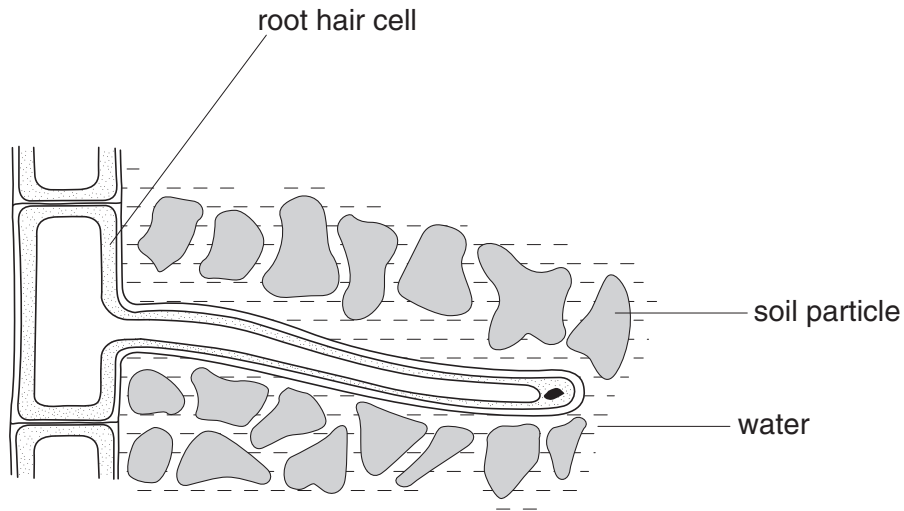


Fig. 6.1

(i) How does the root hair cell increase the amount of water that the plant can take up from the soil?

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

(ii) Describe the way in which water passes from the soil into the root hair cell.

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

(b) Fig. 6.2 shows the yields from cereal crops when they are planted at different rates in dry, average and wet years.

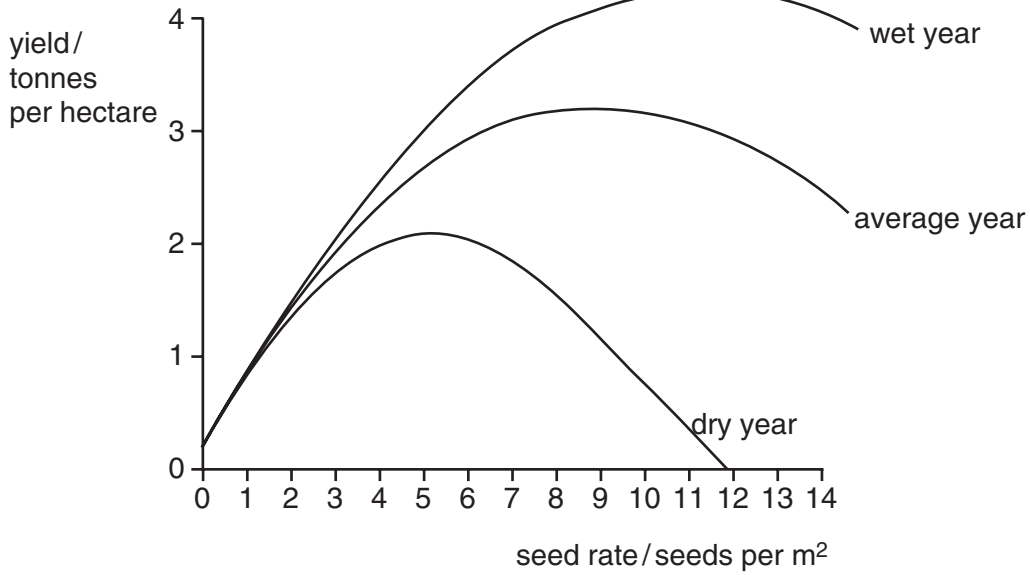


Fig. 6.2

(i) What happens to yield at seed rates between 0 and 4 seeds per m²?

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

(ii) What happens to yield at seed rates between 5 and 9 seeds per m²

in a wet year,
in a dry year?[2]

(iii) Suggest a reason for the results seen in a dry year.

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

[Total : 8]

7 Fig. 7.1 shows the mouth parts of an insect pest of crop plants.

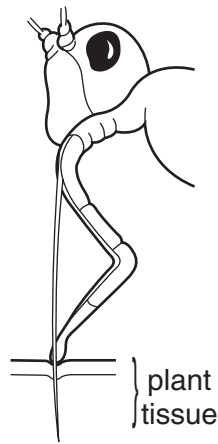


Fig. 7.1

(a) (i) How does this insect feed?

.....[1]

(ii) Why would a systemic insecticide be suitable for the control of this pest?

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

(b) State **one** disadvantage of using insecticides to control insect pests on crops.

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

(c) State **one** biological method and **one** cultural method of controlling insect pests on crops.

biological method

.....

cultural method

.....[2]

[Total : 6]

Section B begins on the next page.

Section B

Answer any **three** 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.

- 8 (a) For a **named** crop, explain how the local soil and climate make it particularly suitable for your area. [8]
- (b) (i) Explain what is meant by *crop rotation* and state its advantages.
- (ii) With the aid of labelled diagrams, describe a three-course rotation that could be used in a small vegetable garden. [7]
- [Total : 15]
- 9 For a **named** type of farm livestock,
- (a) (i) list the products for which it is kept;
- (ii) describe methods of processing and storage of these products; [7]
- (b) describe and explain the changes in its feeding requirements from birth to maturity. [8]
- [Total : 15]
- 10 (a) State the advantages and disadvantages of extensive grazing systems. [6]
- (b) Explain what is meant by *rotational grazing* and describe its advantages. [6]
- (c) Explain why a supply of water is essential for livestock. [3]
- [Total : 15]
- 11 (a) (i) Describe the advantages and disadvantages of farm mechanisation.
- (ii) Explain why using a seed drill is an improvement on broadcasting seed. [8]
- (b) (i) Explain the differences between petrol and diesel engines.
- (ii) Describe the safety precautions that should be taken when using and storing fuel for farm machinery. [7]
- [Total : 15]

- 12 (a) Describe how a maize flower is pollinated and explain how it is adapted for cross-pollination.
- (b) (i) Using examples, explain how asexual reproduction can be used in crop production.
- (ii) State the advantages of producing plants by asexual reproduction.

[9]

[Total : 15]

