Cambridge
O Level

Cambridge International Examinations
Cambridge Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

AGRICULTURE **5038/11**

Paper 1 **October/November 2018**

1 hour 45 minutes

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 an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Section A
Answer **all** questions.
Electronic calculators may be used.
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 **two** questions.
Write your answers on the Answer Booklet/Paper provided.
Enter the numbers of the Section B questions you have answered in the grid.

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	
1	
2	
3	
4	
5	
6	
7	
8	
9	
Section B	
Total	

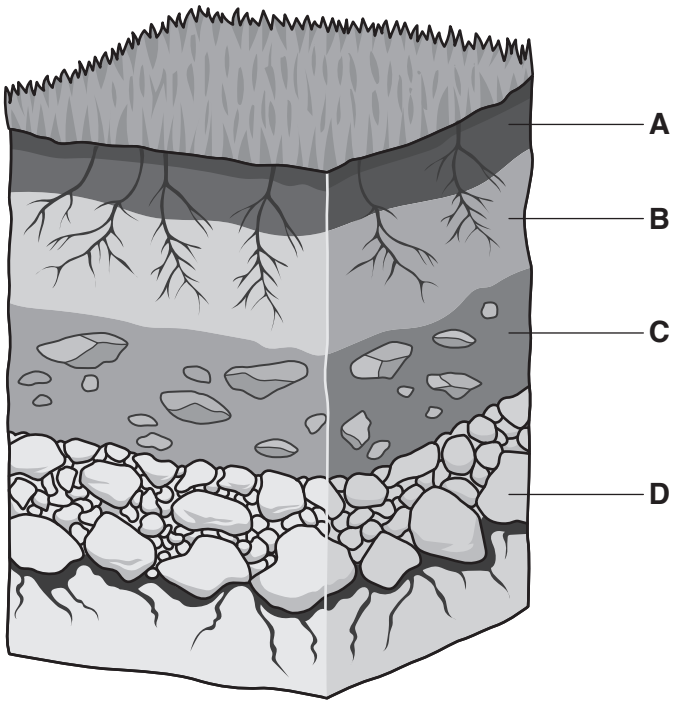
This document consists of **17** printed pages and **3** blank pages.

CAMBRIDGE
International Examinations

Section A

Answer **all** the questions in the spaces provided.

1 The diagram shows a soil profile.



(a) Select **one** letter from the diagram that represents each of the following.

(i) underlying material

.....[1]

(ii) the labelled layer with most organic matter

.....[1]

(b) State **two** living things found in layer **A** of a soil profile.

1 .....

2 .....
[2]

(c) Describe how soil is formed during the process of biological weathering.

.....

.....

.....

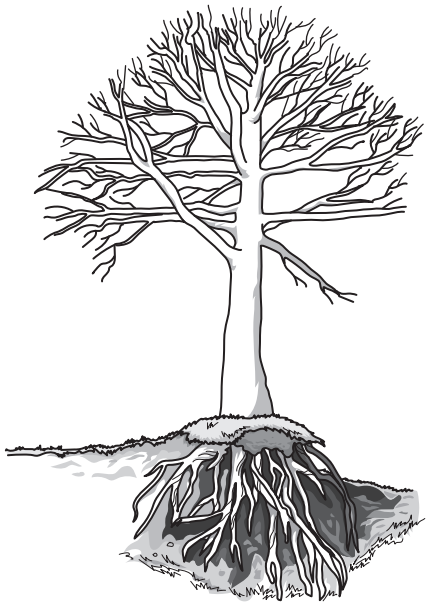
.....

.....

.....[3]

[Total: 7]

2 **(a)** The diagram shows an effect of soil erosion.



Describe what is meant by the term *soil erosion*.

.....

.....[1]

(b) State **one** possible cause of soil erosion. Suggest how to reduce the effects of this cause.

cause .....

suggestion .....

.....

.....

[2]

(c) Suggest **two** reasons for irrigating crops.

1 .....

.....

2 .....

.....

[2]

(d) Crops can be affected by overwatering.

Explain why.

.....

.....

.....

.....[2]

[Total: 7]

3 **(a)** State what is meant by the term *sexual reproduction*.

.....

.....[1]

(b) State **three** differences between the structures of bean and maize flowers.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(c) The following are stages of sexual reproduction in plants.

A fertilisation occurs
B pollen lands on the stigma
C pollen tube enters ovary
D pollen tube grows through style

Using the letters **A**, **B**, **C** and **D** put these stages in the correct order.

.....[1]

(d) Describe the process of fertilisation in a plant.

.....

.....

.....

.....

.....

.....[3]

(e) Some flowers are able to self-pollinate.

Suggest why it is still important that insects, such as bees, pollinate flowers.

.....

.....

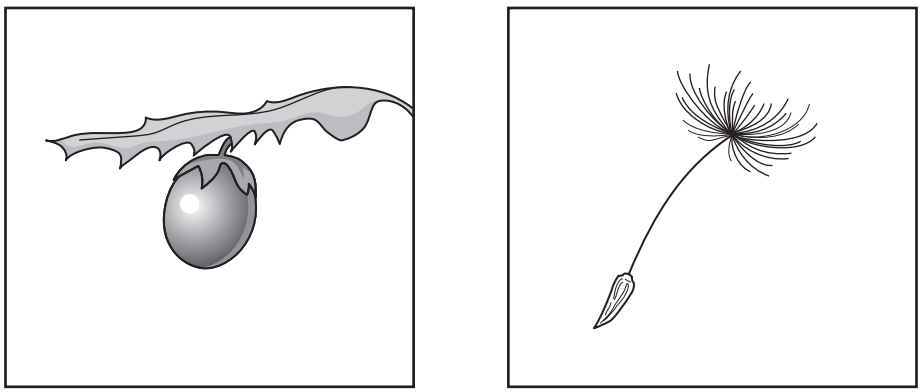
.....

.....[2]

[Total: 10]

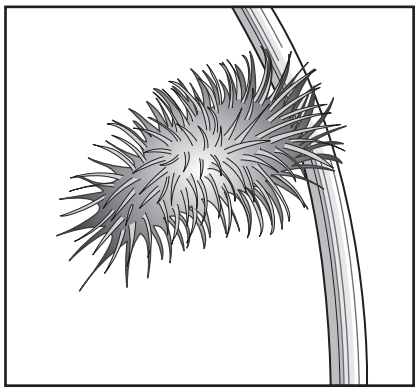
[Turn over

4 **(a)** The diagrams show weed seeds and fruit.



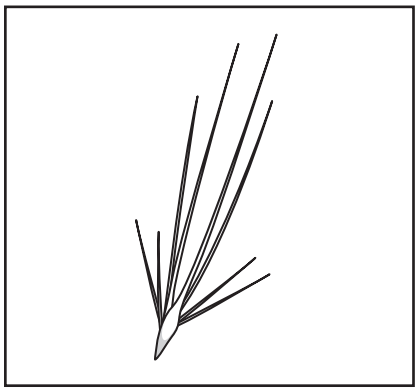
A

B



C

(not to scale)



D

(i) Which seed or fruit is dispersed by wind?

Answer **A**, **B**, **C** or **D** ..... [1]

(ii) Select **one** other seed or fruit from the diagrams and suggest how it is dispersed.

seed or fruit .....

how dispersed .....

.....

.....

.....

[2]

(b) Weeds can cause reduced yields of crops.

(i) State **two** problems that weeds cause to growing crops.

1 .....

.....

2 .....

.....
[2]

(ii) Suggest why weed seeds should be removed from harvested crops.

.....

.....[1]

(iii) Describe **one** method of weed control and explain why it is effective.

.....

.....

.....

.....

.....

.....[3]

[Total: 9]

[Turn over

5 **(a)** Outline the process of photosynthesis.

.....

.....

.....

.....

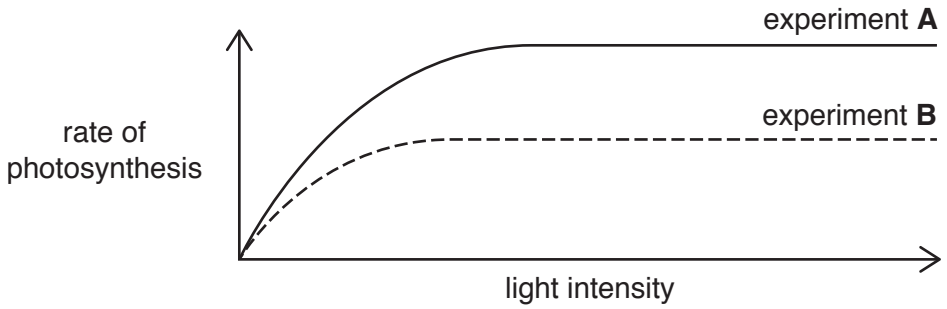
.....

.....

.....

.....[4]

(b) The graph shows the results of experiments to measure the rate of photosynthesis.



Suggest **two** reasons to explain the difference in rate of photosynthesis between the line for experiment **A** and the line for experiment **B**.

1 .....

.....

2 .....

.....

[2]

(c) Describe what is meant by the term *translocation*.

.....

.....

.....

.....[2]

[Total: 8]

6 The photograph shows a farmer pouring a chemical into the mixing tank of a sprayer.

(a) State **one** safety precaution used by the farmer and describe a reason for this.

safety precaution .....

reason .....

.....
[2]

(b) **(i)** Give a reason why the sprayer should be cleaned after use.

.....

.....[1]

(ii) Describe how the sprayer should be cleaned after use to avoid pollution.

.....

.....

.....

.....[2]

(c) Explain why using the correct dilution of chemical sprays is important.

.....

.....

.....

.....[2]

[Turn over

(d) Name **one** type of farm chemical and suggest an alternative method that is likely to cause less damage to the environment.

type of farm chemical .....

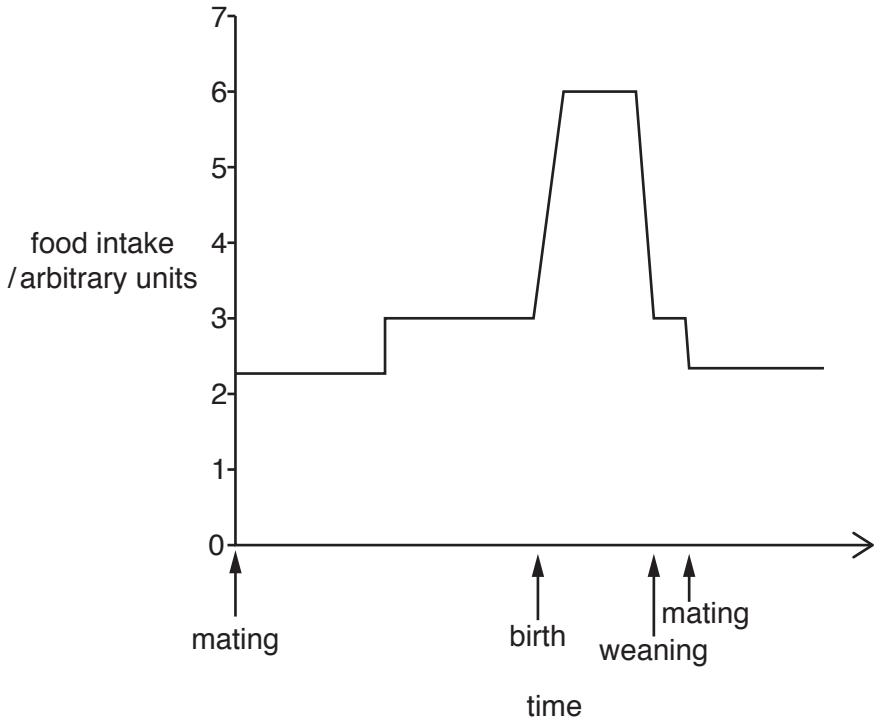
alternative method .....

.....

[1]

[Total: 8]

7 **(a)** The diagram shows the food intake of a female farm animal over its reproductive cycle.



(i) State the food intake required at weaning.

..... arbitrary units [1]

(ii) Give **one** reason why food intake increases after giving birth.

.....

.....[1]

(iii) Suggest a high-energy food material for this farm animal.

.....[1]

(b) Suggest why it is important that female dairy animals are **not** underweight when joining the adult herd.

.....

.....

.....

.....

.....

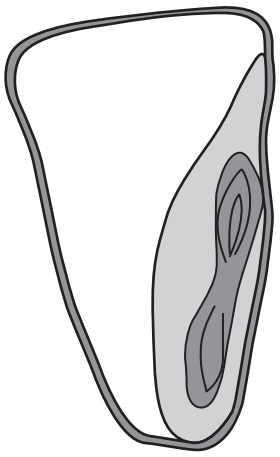
.....[3]

[Total: 6]

8 **(a)** The diagram shows a cross-section of a maize seed.

(i) Label the diagram using the following words.

embryo **endosperm** **seed coat**



[3]

(ii) State the function of the endosperm.

.....

.....[1]

(b) Describe **two** environmental conditions required for the germination of maize.

1 .....

.....

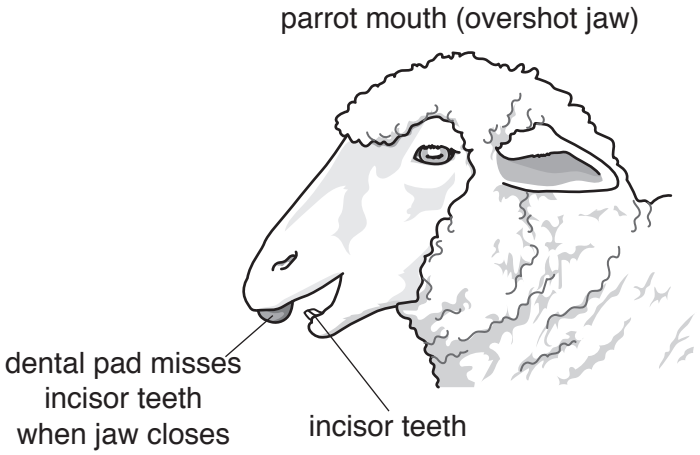
2 .....

.....

[2]

[Total: 6]

9 **(a)** The diagram shows a genetic condition that can affect sheep. This condition is caused by a single recessive gene.



(i) State what is meant by the term *recessive*.

.....

.....[1]

(ii) Explain why **not** all offspring of a sheep with parrot mouth show this condition.

.....

.....

.....

.....[2]

(b) The recessive allele t causes parrot mouth.

The expected ratio of offspring with parrot mouth to those without parrot mouth when both parents are heterozygous is 1:3.

Show how this ratio is calculated.

[3]

(c) (i) Suggest **one** problem for sheep of having parrot mouth.

.....

.....[1]

(ii) Describe how selective breeding could be used to produce a flock of sheep in which the condition of parrot mouth is very rare.

.....

.....

.....

.....[2]

[Total: 9]

Section B

Answer any **two** questions.

Write your answers on the separate paper provided.

10 **(a)** State what is meant by the term *organic farming*. [3]

(b) Describe the benefits and limitations of organic crop production. [7]

(c) Explain how crop pests are controlled in an organic farming system. [5]

11 **(a)** Describe the process of transpiration. [5]

(b) Describe how environmental factors affect the rate of transpiration. [4]

(c) Explain how plants store the products of photosynthesis. [6]

12 **(a)** Explain what is meant by the term *notifiable* disease and suggest why some diseases are notifiable. [3]

(b) Describe the different ways disease can spread between livestock. [5]

(c) Explain how to reduce the spread of disease between livestock. [7]

13 **(a)** State what is meant by the term *rotational grazing*. [4]

(b) Describe how the use of livestock fencing can increase carrying capacity. [6]

(c) Explain the problems of overstocking. [5]

14 **(a)** Describe what is meant by a *loam* soil. [3]

(b) Explain why the water-holding capacity of a loam soil differs from a sandy soil. [6]

(c) Explain why an effective water-drainage system is needed in a clay soil and describe methods to improve drainage in clay soils. [6]

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