Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

8203523995

AGRICULTURE **0600/11**

Paper 1 Theory **October/November 2020**

1 hour 45 minutes

You must answer **Section A** on the question paper and **Section B** on the answer booklet/paper you have been given.

You will need: Answer booklet/paper

INSTRUCTIONS

- Section A: answer **all** questions. Write your answer to each question in the space provided on the question paper.
- Section B: answer **two** questions. Write your answer on the separate answer booklet/paper provided.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.
- You should show all your working and use appropriate units.
- At the end of the examination, fasten all your work together. Do **not** use staples, paper clips or glue.

INFORMATION

- The total mark for this paper is 100.
- The number of marks for each question or part question is shown in brackets [ ].

For Examiner's use	
Section A	
1	
2	
3	
4	
5	
6	
7	
8	
9	
Section B	
Total	

This document has **16** pages. Blank pages are indicated.

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Section A

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

1 Organic production is an example of a farming practice.

(a) (i) Describe what is meant by the term *organic production*.

.....

.....

.....

..... [2]

(ii) Describe **two** benefits and **two** potential problems of organic production.

benefit 1 .....

.....

benefit 2 .....

.....

potential problem 1 .....

.....

potential problem 2 .....

.....

[4]

(b) Explain **two** ways to increase production using organic methods.

1 .....

.....

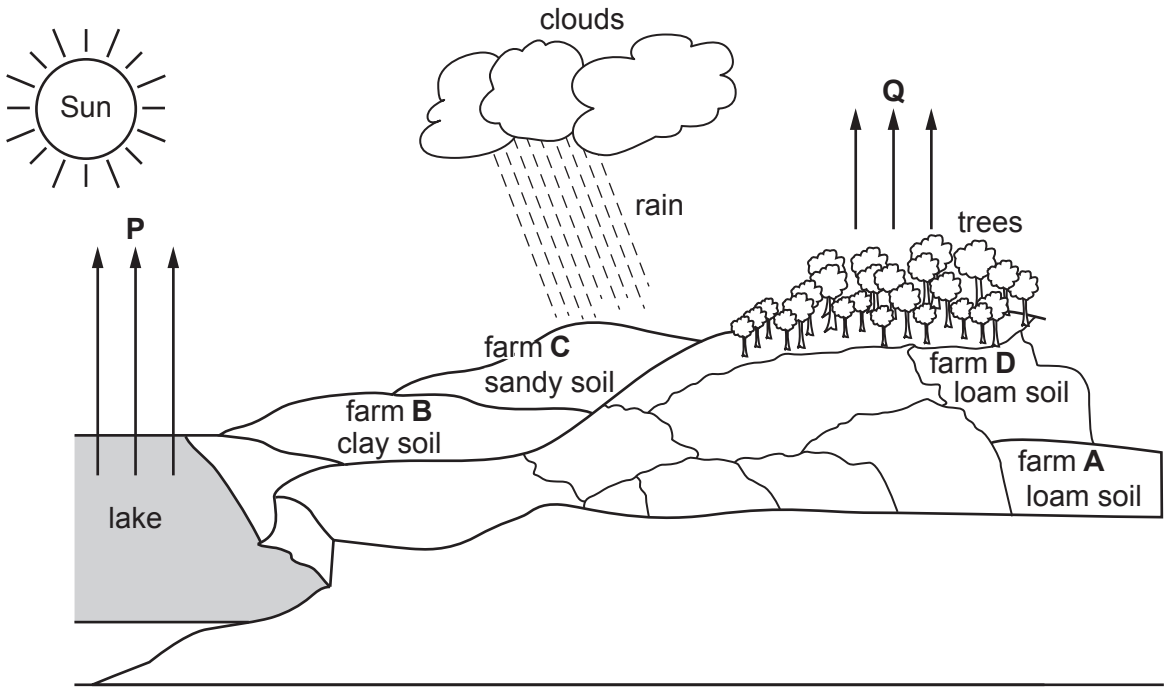
2 .....

.....

[2]

[Total: 8]

2 The diagram shows the location of four farms, **A** to **D**, that differ in their soil and topography.



(a) Use the diagram to answer the following questions.

(i) Which farm is most at risk of soil erosion?

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

(ii) Which farm is likely to experience rapid drainage of soil water?

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

(b) Letters **P** and **Q** on the diagram represent two different processes within the water cycle.

(i) State the name of process **P** by which water is lost from the lake.

..... [1]

(ii) State the name of process **Q** by which water is lost from trees.

..... [1]

(iii) State **three** factors that increase the rate of process **Q**.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(c) Suggest **one** reason why the growing season may be later at farm **B**.

.....

..... [1]

[Total: 8]

3 **(a)** The diagram shows an equation for photosynthesis.

$$\text{water} + \text{carbon dioxide} \xrightarrow[\mathbf{B}]{\mathbf{A}} \textbf{product 1} + \textbf{product 2}$$

(i) In addition to water and carbon dioxide plants need both **A** and **B** for photosynthesis.

Identify **A** and **B** shown in this equation.

A .....

B .....

[2]

(ii) Identify **product 1** and **product 2** shown in this equation.

product 1 .....

product 2 .....

[2]

(b) Describe what happens to each of the **two** products following photosynthesis.

product 1 .....

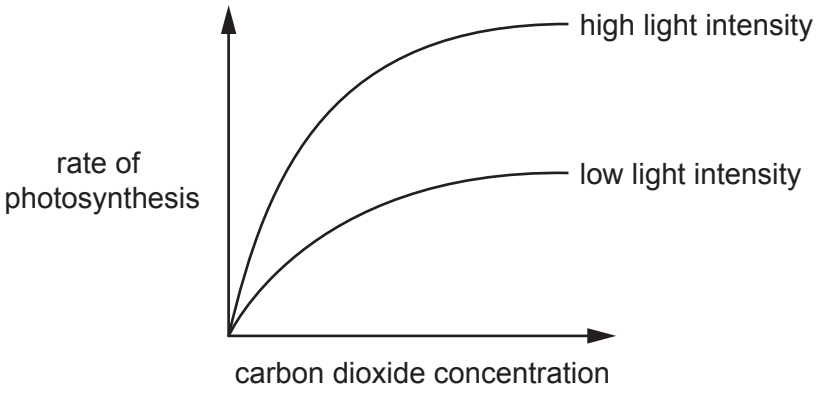
.....

product 2 .....

.....

[2]

(c) The diagram shows how different factors affect the rate of photosynthesis.



Describe, using the information in the diagram, how the following affect the rate of photosynthesis:

(i) increasing carbon dioxide concentration

.....

.....

.....

..... [2]

(ii) increasing light intensity.

.....

..... [1]

[Total: 9]

4 **(a)** The table shows four processes, **A** to **D**, involved in the movement of substances in plants.

process	process name
A	evaporation
B	osmosis
C	translocation
D	transpiration

Use the table to identify the process, **A** to **D**, involved when:

(i) water enters root hairs from soil

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

(ii) synthesised food moves in the phloem.

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

(b) Explain how dissolved mineral salts move through plant vascular tissues from the roots to where they are needed.

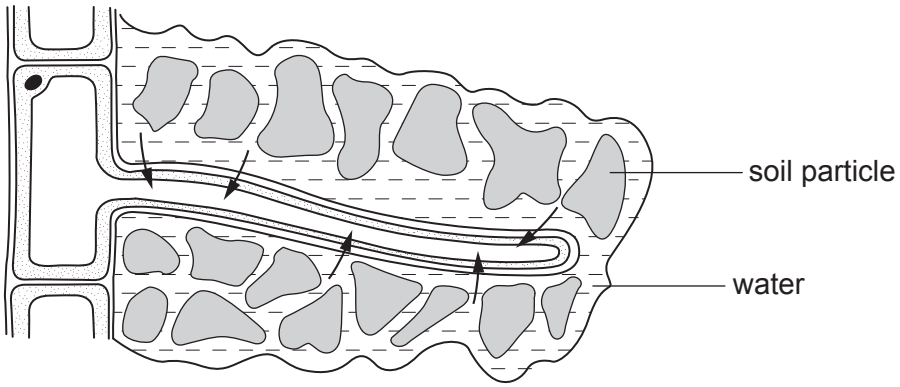
.....

.....

.....

..... [2]

(c) The diagram shows a root hair cell.



Explain how **one** feature of this root hair cell helps it to take in water.

.....

.....

.....

..... [2]

[Total: 6]

5 **(a)** Describe what is meant by the term *pollination*.

.....

.....

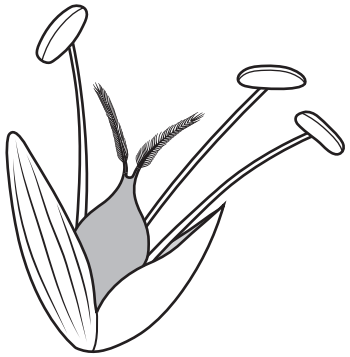
.....

..... [2]

(b) The diagram shows the flower of a wind-pollinated plant.

(i) Label each of the following on the diagram.

anther **filament** **stigma**



[3]

(ii) Describe **two** features of this flower that increase the chances of pollination.

1 .....

.....

2 .....

.....

[2]

(iii) Describe **two** ways that an insect-pollinated flower may differ from the flower shown in the diagram.

1 .....

.....

2 .....

.....

[2]

[Total: 9]

6 **(a)** A 500 kg bag of compound fertiliser contains 2.5% potassium.

Calculate the mass of potassium in this bag. Give a unit for your answer.

answer .....

unit .....
[2]

(b) Explain the possible effects of a compound fertiliser on soil pH.

.....

.....

.....

..... [2]

(c) Describe how the addition of lime could affect soil pH.

.....

..... [1]

(d) Describe **two** symptoms of nitrogen deficiency in plants.

1 .....

.....

2 .....

.....
[2]

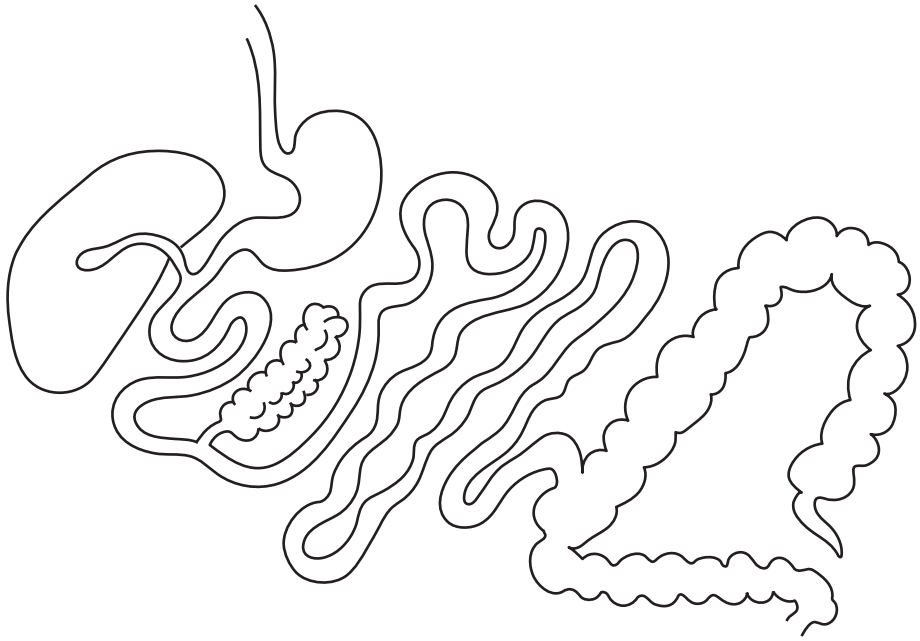
[Total: 7]

[Turn over

7 **(a)** The diagram shows part of the digestive system of a non-ruminant.

Label each of the following on the diagram.

caecum **small intestine** **stomach**



[3]

(b) Describe the function of each of the following parts of the non-ruminant digestive system:

large intestine .....

.....

liver .....

.....

small intestine .....

.....

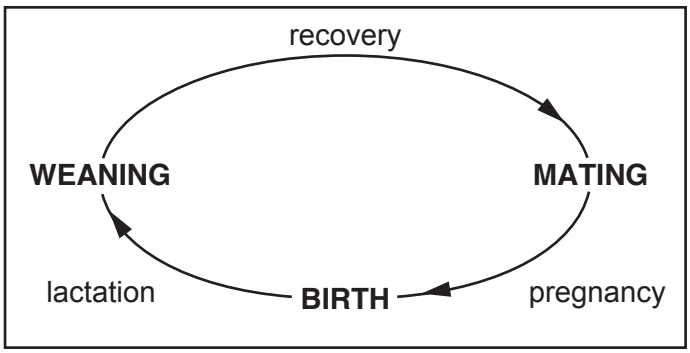
stomach. .....

.....

[4]

[Total: 7]

8 The diagram shows the reproductive cycle of a female mammalian farm animal.



(a) State what is meant by each of the following terms:

lactation .....

.....

weaning. .....

.....
[2]

(b) **(i)** Describe **two** ways that the feed requirements of a female mammalian farm animal may change during pregnancy. Explain **one** of these changes.

change 1 .....

.....

change 2 .....

.....

change chosen .....

explanation .....

.....
[3]

(ii) Explain why the energy requirements of a female mammalian farm animal change after she gives birth.

.....

.....

.....

..... [2]

[Total: 7]

9 Drought resistance in a plant is controlled by a single gene. The allele for drought resistance, **D**, is dominant.

(a) State what is meant by the following terms:

dominant .....

.....

heterozygous. .....

.....
[2]

(b) **(i)** Draw a genetic diagram to show the expected ratio of offspring with drought resistance to offspring without drought resistance when crossing two heterozygous plants.

[4]

(ii) State the phenotype of a plant that has the genotype **Dd**.

.....

..... [1]

(c) Suggest **one** characteristic, other than drought resistance, that might be bred into a crop. Explain how this might benefit a farmer.

characteristic .....

explanation .....

.....
[2]

[Total: 9]

Section B

Answer any **two** questions.

Write your answers on the separate paper provided.

10 A young farmer has inherited a field that has been used for crop production for many years. Crop yields from the field are poor.

(a) Suggest how the young farmer could improve the soil before they sow their first crop. [5]

(b) For a named crop, explain how that crop should be planted and cared for to obtain maximum yield from the land. [5]

(c) The site is very windy and dry.

Describe what the farmer could do over the next few years to reduce the effect of these problems. [5]

[Total: 15]

11 **(a)** Name a piercing and sucking crop pest and describe its effect on a crop. [4]

(b) Describe how a pest could be controlled without the use of chemicals. [5]

(c) Explain how growing genetically modified crops can affect farm profits. [6]

[Total: 15]

12 **(a)** State what is meant by the term *notifiable disease*. Describe the action a farmer must take if a notifiable disease is suspected. [2]

(b) Describe signs of ill-health in livestock. [7]

(c) Explain how the spread of infectious diseases between farm animals can be reduced by good stockmanship. [6]

[Total: 15]

13 **(a)** Explain what is meant by the term *production ration*. [3]

(b) Describe livestock housing suitable for large farm animals. [6]

(c) Explain how poorly designed livestock housing can lead to ill-health in animals. [6]

[Total: 15]

14 **(a)** Describe how a supply of water could be obtained and stored. [4]

(b) Describe how water supplied to a farm could be distributed to animals. [5]

(c) Suggest why water may need to be treated to make it suitable for consumption by livestock. Describe how the water could be treated. [6]

[Total: 15]

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