



Cambridge IGCSE™

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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.

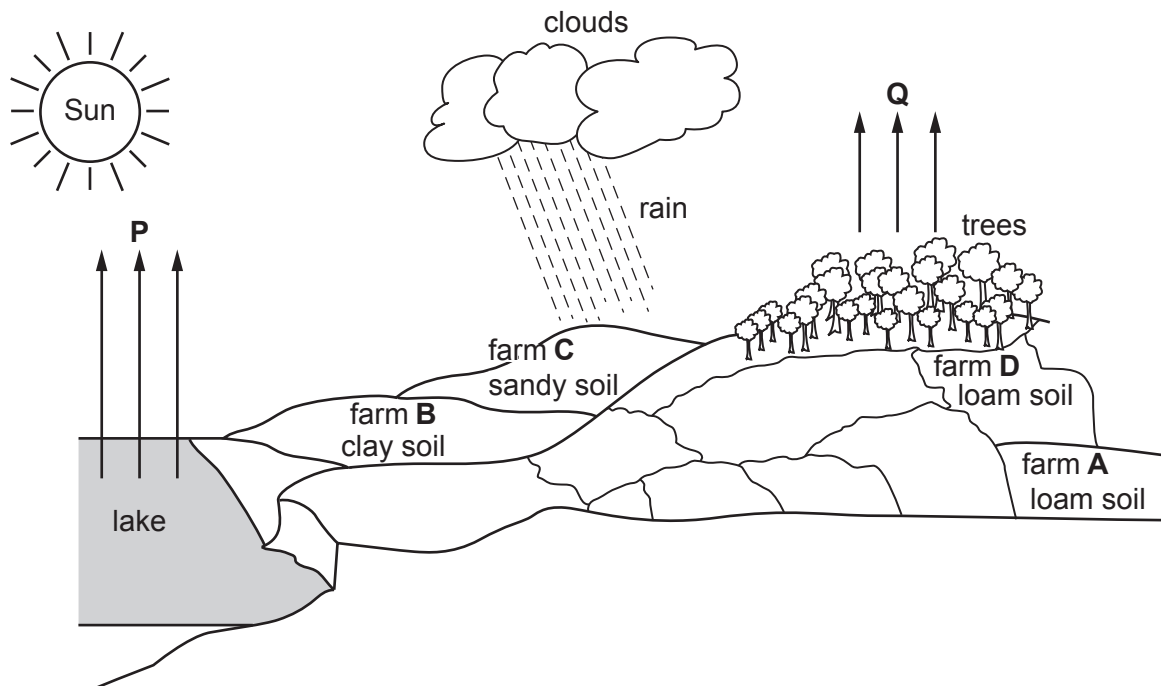
benefit 1
.....
benefit 2
.....
potential problem 1
.....
potential problem 2
..... [4]

(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]

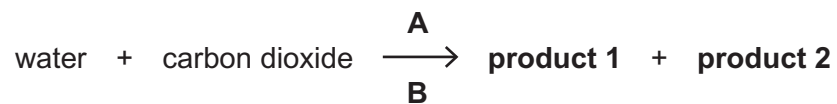
(c) Suggest **one** reason why the growing season may be later at farm **B**.

.....

..... [1]

[Total: 8]

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



- (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

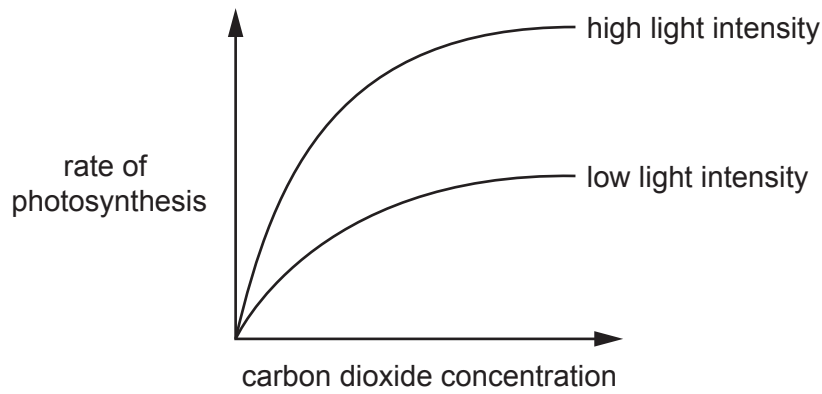
.....

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]

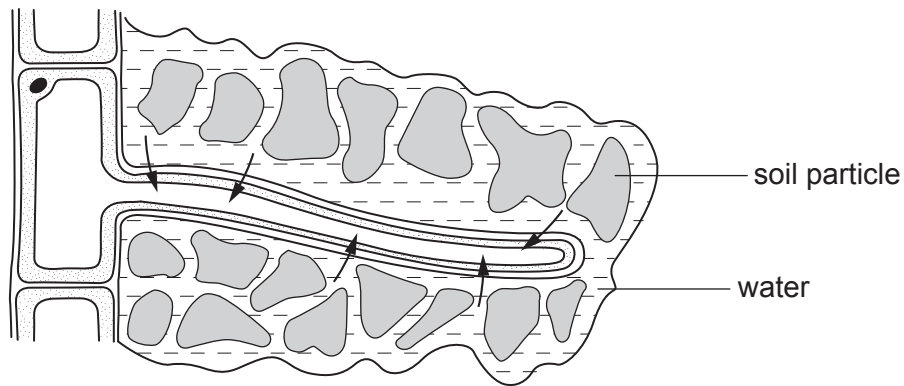
- (ii) synthesised food moves in the phloem.

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*.

.....

.....

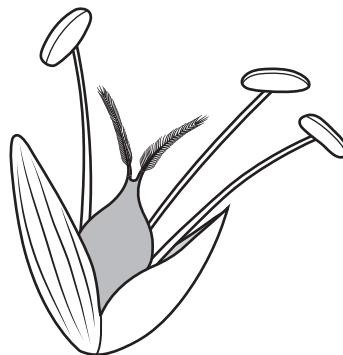
.....

..... [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]

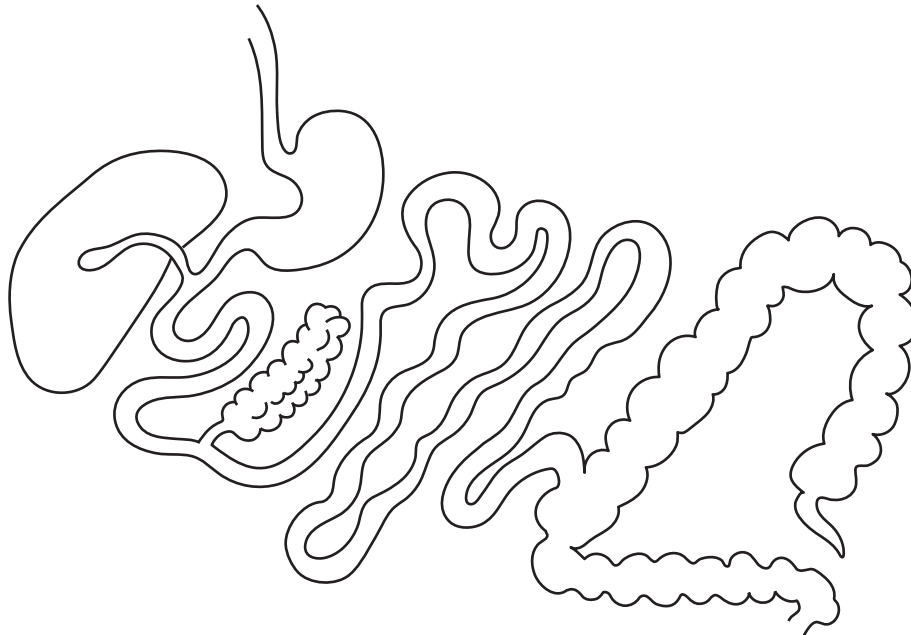
7 (a) The diagram shows part of the digestive system of a non-ruminant.

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

.....

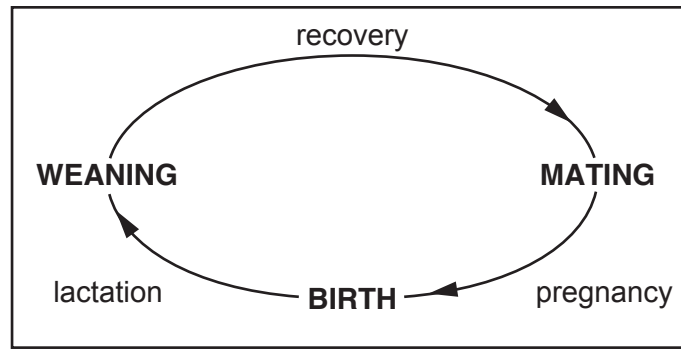
stomach.

.....

[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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