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CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

5504785465

AGRICULTURE **0600/11**

Paper 1 Theory **October/November 2025**

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Section A: answer **all** questions.
- Section B: answer **two** questions.
- 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.
- Write your answer to each question in the space provided.
- 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.

INFORMATION

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

This document has **20** pages. Any blank pages are indicated.

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Section A

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

1 **(a)** State **three** examples of negative effects that piercing and sucking pests can cause to crops.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(b) **(i)** Give **one** example of biological pest control.

.....

..... [1]

(ii) Describe how biological pest control works.

.....

.....

.....

..... [2]

(iii) Describe **two** possible problems when using biological pest control.

1 .....

.....

2 .....

.....

[2]

[Total: 8]

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2 Some farm animals have lop ears, which hang down by their face. Other farm animals have upright ears.

The photographs show goats with these types of ears.



lop ears



upright ears

Assume that one gene controls whether or not goats are born with lop ears.

A capital letter (**E**) and lowercase letter (**e**) represent different versions of this gene.

(a) State why capital and lowercase letters are used to describe different versions of a gene.

.....

..... [2]

(b) Allele **E** results in a goat having upright ears.

For this gene, state the phenotype of:

a homozygous dominant goat

.....

a heterozygous goat

.....

a homozygous recessive goat.

.....

[3]

(c) Use a diagram to show the expected phenotype ratio of offspring produced from a cross between an **Ee** and an **ee** goat.

[3]

[Total: 8]

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3 **(a)** The table shows some actions that can reduce disease in livestock housed indoors.

For each action, complete the table to suggest a different reason why it can reduce disease.

action	reason why it can reduce disease
isolation of sick animals	
maintaining good hygiene	
providing sufficient feed	
regular health checks	
vaccination of young stock	
ventilation	

[6]

(b) A farmer has carried out all the actions listed in **(a)**.

Suggest **two** further actions that the farmer could take to reduce disease.

1 .....

.....

2 .....

.....

[2]

[Total: 8]

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4 **(a)** Describe the harvesting and storage of a named crop.

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.....

.....

..... [3]

(b) State **three** ways that weeds can reduce the yield of a crop.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

[Total: 6]

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5 **(a)** Bean and maize plants have different methods of pollination.

(i) Describe what is meant by pollination.

.....

.....

.....

..... [2]

(ii) Suggest **two** ways farmers can increase pollination in crops.

1 .....

.....

2 .....

.....

[2]

(b) The diagram shows a flower from a type of bean plant.

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Identify the following parts of the flower:

A .....

B .....

C .....

D. .....

[4]

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(c) Explain **one** way that the flower of a maize plant is adapted to ensure pollination.

.....

.....

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..... [2]

[Total: 10]

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6 **(a)** Some farming practices can change soil pH.

(i) Describe **one** farming practice that can decrease soil pH.

.....

..... [1]

(ii) State **one** farming practice that can increase soil pH.

.....

..... [1]

(b) **(i)** Other than nitrogen fixation by legumes, describe how the nitrogen cycle makes nitrogen available to plants.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(ii) Describe **two** common plant symptoms of soil nitrogen deficiency.

1 .....

.....

2 .....

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[2]

[Total: 8]

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7 **(a)** Describe the birth of a named mammalian farm animal.

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.....

..... [6]

(b) Describe the weaning of a mammalian farm animal.

.....

.....

.....

..... [2]

[Total: 8]

8 **(a)** Describe the process of sexual reproduction.

.....

.....

.....

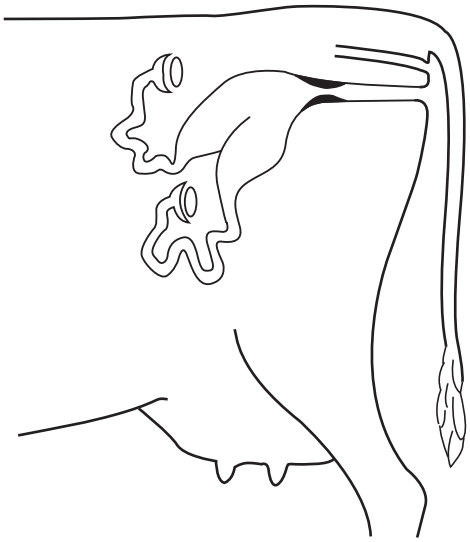
.....

.....

..... [3]

(b) Label the following reproductive organs on the diagram.

cervix **ovary** **oviduct** **vagina**



[4]

(c) Suggest **two** ways that the chances of successful fertilisation can be increased when using artificial insemination.

1 .....

.....

2 .....

.....

[2]

[Total: 9]

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9 The table shows some information about the production of a crop in four different areas **A**, **B**, **C** and **D**.

area	total crop production / million tonnes	average crop harvested / tonnes per hectare	area of farmland used to grow crop / million hectares
A	1452		210.4
B	495	3.7	133.8
C	708	2.9	244.1
D	305	8.1	37.7

(a) (i) Use the table to calculate the average crop harvested in area **A**.

Give your answer to one decimal place.

..... tonnes per hectare [1]

(ii) Calculate the difference in the average crop harvested between area **D** and area **C**.

Give your answer to one decimal place.

..... tonnes per hectare [1]

(b) One reason why the average crop harvested in area **C** is less than the average crop harvested in area **B** might be farm mechanisation.

Suggest **three** ways farm mechanisation can reduce crop yields.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

[Total: 5]

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Section B

Answer any **two** questions.

Write the question numbers you have chosen here: .....

10 **(a)** Describe a zero-grazing farming system. [3]

(b) Other than rotational grazing, describe **three** methods to improve the quality of a pasture. Explain how each method improves pasture quality. [6]

(c) Explain **three** ways rotational grazing can increase the yield of a pasture. [6]

[Total: 15]

11 **(a)** Describe the modes of action of a systemic pesticide. [3]

(b) Describe **three** methods of cultural pest control. Suggest how each method works. [6]

(c) Explain **three** ways a farmer can apply herbicides to a crop safely. [6]

[Total: 15]

12 **(a)** Describe how a farmer could test a field to determine the soil pH. [5]

(b) Explain **three** reasons why it is important to maintain a good soil crumb structure. [6]

(c) Suggest how a farmer would clear an area of forest to prepare a soil to grow a cereal crop. [4]

[Total: 15]

13 **(a)** Describe how very low environmental temperatures can affect crop growth. [4]

(b) Suggest how frost damage to crops can be reduced. [5]

(c) State **three** ways excessive heat is a danger to plants. Describe how these risks can be reduced. [6]

[Total: 15]

14 **(a)** State what is meant by a maintenance ration. [3]

(b) Describe **four** livestock farming situations that would require a production ration. [4]

(c) Suggest **four** foods that a farmer might feed to cattle. State a different nutrient each food contains. [8]

[Total: 15]

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