



**2005**  
**HIGHER SCHOOL CERTIFICATE**  
**EXAMINATION**

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Centre Number

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Student Number

# Agriculture

## Paper 1

### General Instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black or blue pen
- Draw diagrams using pencil
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of this page and page 5

### Total marks – 70

**Section I** Pages 2–4

#### 25 marks

- Attempt Questions 1–3
- Allow about 40 minutes for this section

**Section II** Pages 5–8

#### 30 marks

- Attempt Questions 4–5
- Allow about 50 minutes for this section

**Section III** Pages 9–10

#### 15 marks

- Attempt ONE question from Questions 6–9
- Allow about 30 minutes for this section

## Section I

25 marks

Attempt Questions 1–3

Allow about 40 minutes for this section

Answer the questions in the spaces provided.

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Marks

Question 1 (9 marks)

Name ONE farm product you have studied.

Name of product .....
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For the farm product you have named:

(a) Identify ONE market specification. 1

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(b) Describe ONE management strategy a farmer can use to meet this market specification. 2

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(c) Account for a farmer's decision to sell the product even though it may not meet this market specification. 2

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(d) Explain how the timing of a named management operation affects the profitability of the product named above. 4

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**Question 2 (9 marks)**

- (a) Describe ONE effect of farming practices on waterways. **2**

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- (b) Outline ONE Aboriginal land management practice and its effect on the environment. **2**

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Name a soil degradation problem associated with agricultural production.

Soil degradation problem .....
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- (c) Identify TWO farming practices that have contributed to this soil degradation problem. **2**

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- (d) Explain a practice that farmers use to overcome this soil degradation problem. **3**

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**Question 3** (7 marks)

A researcher conducted a trial using seven sites to determine the effect of two pesticides on the population of locusts.

The results for each of the seven sites for each pesticide are shown in Figure 1.

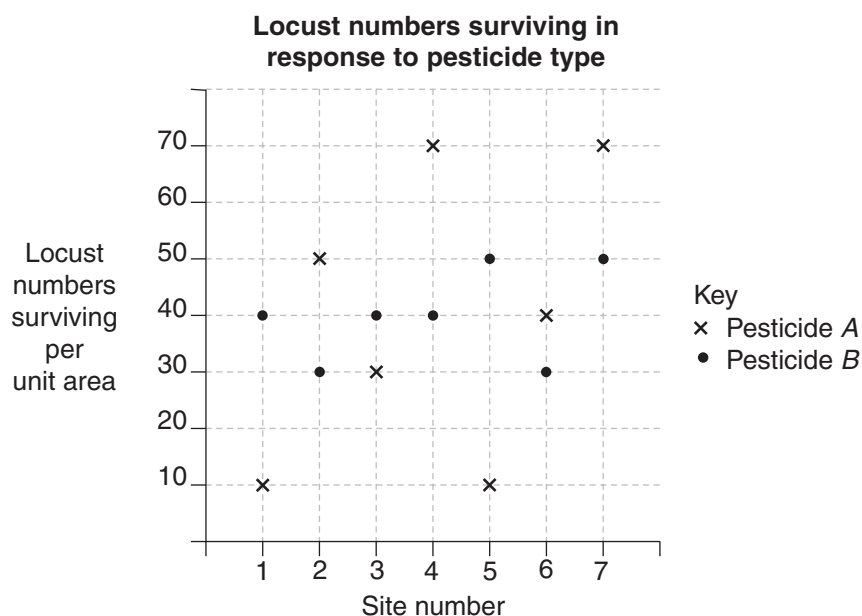


Figure 1

- (a) Calculate the mean levels of locust numbers for each pesticide treatment. 2

Pesticide treatment A .....

Pesticide treatment B .....

- (b) Compare the variability of the results for each pesticide treatment. 2

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- (c) Propose THREE further actions the researcher may take before making recommendations to farmers based on the results from this trial. 3

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Centre Number

Section II

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Student Number

30 marks

Attempt Questions 4–5

Allow about 50 minutes for this section

Answer the questions in the spaces provided.

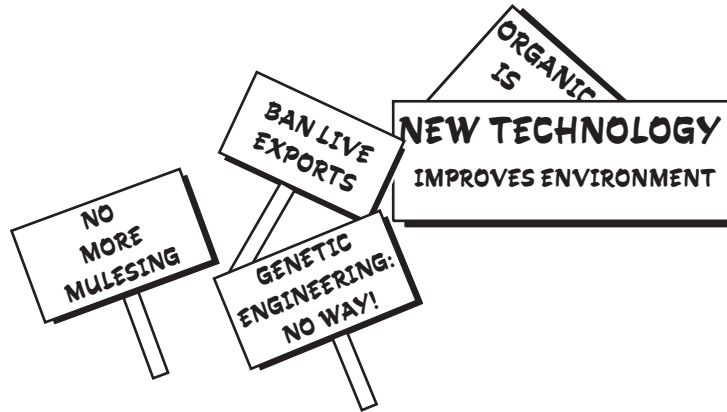
	<b>Marks</b>
<b>Question 4</b> (15 marks)	
(a) Describe the effect of a named pest or disease on an animal production system.	<b>2</b>
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(b) Explain how, in a pest population, chemical resistance occurs and may increase over time.	<b>3</b>
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(c) Explain how the farmer can use integrated pest management strategies to control a named pest or disease.	<b>4</b>
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Question 4 continues on page 6

Question 4 (continued)

- (d) The diagram below identifies some new technologies and current issues in animal production.

6



Analyse how animal production systems may be changed as a result of:

- developments of new technology; and
- animal welfare issues.

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End of Question 4

**Question 5** (15 marks)

Table 1 shows some growing requirements of legume crops that can be used in cereal crop rotations.



- (a) Identify which TWO legume crops would grow best in clay soils that are alkaline and have poor drainage. **2**

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- (b) Describe ONE method a farmer could use to reduce the waterlogging of soils. **2**

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**Question 5 continues on page 8**

Question 5 (continued)

The following is further information provided for farmers considering growing legume crops:

‘The legume crop should be sown, using “minimum tillage” methods, into cereal stubble to maximise nitrogen fixation. Weed seed levels should be low.’

- (c) Describe ONE effect of high weed seed levels on cropping systems. 2

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- (d) Explain a role of legumes in crop rotation systems. 3

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- (e) Discuss advantages and disadvantages of using ‘minimum tillage’ in cropping systems. 6

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**End of Question 5**



# Agriculture

## Section III

15 marks

Attempt ONE question from Questions 6–9

Allow about 30 minutes for this section

Answer the question in a writing booklet. Extra writing booklets are available.

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	<b>Marks</b>
<b>Question 6</b> (15 marks)	
(a) Describe TWO factors that lead to irregular farm income.	<b>5</b>
(b) Analyse various marketing strategies farmers could use to maximise farm income.	<b>10</b>

In your answer, identify the key components of each marketing strategy, and illustrate the implications of each strategy with examples.

**OR**

<b>Question 7</b> (15 marks)	
(a) Describe TWO factors a farmer would need to consider before choosing to grow a particular crop.	<b>5</b>
(b) Analyse the management strategies farmers could use to ensure that a selected crop reaches its genetic potential.	<b>10</b>

In your answer, identify the key components of each management strategy, and illustrate the implications of each strategy with examples.

**OR**

**Please turn over**

**Question 8** (15 marks)

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|-----|--|-----------|
| (a) | Describe the changing protein and energy requirements of an animal from birth to maturity.                                   | <b>5</b>  |
| (b) | Analyse the role of pasture in providing the protein and energy requirements of a named farm animal over a production cycle. | <b>10</b> |

In your answer, identify the key issues related to a pasture's ability to provide protein and energy, and illustrate the implications of each issue with examples.

**OR**

**Question 9** (15 marks)

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|-----|---|-----------|
| (a) | Describe TWO ways a farmer may use computer technology in farm management.                            | <b>5</b>  |
| (b) | Analyse various sources of information farmers may use to assist farm management and decision making. | <b>10</b> |

In your answer, identify the key components of each source of information, and illustrate the implications of using each source with examples.

**End of paper**