
Student Number

Agriculture ANSWER BOOKLET

General Instructions

- Write your student number at the top of this page
- Reading time – 5 minutes
- Working time – 3 hours
- Write using black pen
- Draw diagrams using pencil
- Calculators approved by NESA may be used

Section I – 80 marks

This section has two parts, Part A and Part B

Part A – 20 marks

• Attempt Questions 1–20

• Allow about 30 minutes for this part

Part B – 60 marks (pages 4 - 12)

• Attempt Questions 21 – 29

• Allow about 1 hour and 45 minutes for this part

Section II – 20 marks (pages 15 – 16)

• Attempt ONE question from Questions 30 - 32

• Allow about 45 minutes for this section

Total marks: 100

Section I

Part A – 20 marks
Attempt Questions 1 – 20
Allow about 30 minutes for this part.

Use the multiple choice answer sheet.

Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely

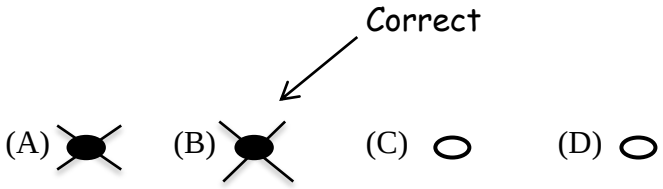
Sample: 2+4 = (A) 2 (B) 6 (C) 8 (D) 9

(A) (B) (C) (D)

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

(A) (B) (C) (D)

If you change your mind and have crossed out what out what you consider to be the correct answer then indicate the correct answer by writing the word correct and drawing an arrow as follows.



AGRICULTURE

Section I **Mark _____ / 20**

Part A – 20 marks

Multiple Choice Answer Sheet.

Select the alternative A, B, C or D that best answers the question.

Shade in the response circle completely.

1.	**A O**	**B O**	**C O**	**D O**
2.	**A O**	**B O**	**C O**	**D O**
3.	**A O**	**B O**	**C O**	**D O**
4.	**A O**	**B O**	**C O**	**D O**
5.	**A O**	**B O**	**C O**	**D O**
6.	**A O**	**B O**	**C O**	**D O**
7.	**A O**	**B O**	**C O**	**D O**
8.	**A O**	**B O**	**C O**	**D O**
9.	**A O**	**B O**	**C O**	**D O**
10.	**A O**	**B O**	**C O**	**D O**
11.	**A O**	**B O**	**C O**	**D O**
12.	**A O**	**B O**	**C O**	**D O**
13.	**A O**	**B O**	**C O**	**D O**
14.	**A O**	**B O**	**C O**	**D O**
15.	**A O**	**B O**	**C O**	**D O**
16.	**A O**	**B O**	**C O**	**D O**
17.	**A O**	**B O**	**C O**	**D O**
18.	**A O**	**B O**	**C O**	**D O**
19.	**A O**	**B O**	**C O**	**D O**
20.	**A O**	**B O**	**C O**	**D O**

Section I

Part B – 60 marks

Attempt Questions 21–29

Allow about 1 hour and 45 minutes for this part

- Answer the questions in the spaces provided.
- These spaces provide guidance for the expected length of response.
- Extra writing space is provided on pages 12 - 13. If you use this space, clearly indicate which question you are answering.

Question 21 (16 marks)

Answer parts (a) – (d) with reference to a farm product you have studied.

Name of farm product:_____

(a) Describe TWO ways government can influence the production AND/OR marketing of the named farm product. **4**

_____

_____

_____

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_____

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_____

Question 21 continues on page 5

Question 21 (continued)

(b) Discuss TWO management strategies available to farmers to meet market specifications for the farm product you have studied. **6**

(c) Outline the role of advertising and promotion in the marketing of the final product for the consumer. **2**

(d) Describe ways in which the final product, for the consumer, can be value added. **4**

End of Question 21

Question 22 (4 marks)

Provide points for AND against contract selling as a marketing strategy available to farmers. **4**

Question 23 (4 marks)

Describe ways in which a farmer could reduce the negative welfare impact when carrying out a husbandry practice on an animal. **4**

Question 24 (4 marks)

Relate the physiology of the ruminant digestive system to their dietary requirements. **4**

Question 25 (8 marks)

Farmers have various management techniques available to them to manipulate the growth and development of their farm animals on Australian farms.

Evaluate TWO management techniques used on farm animals to manipulate growth and development. **8**

Question 26 (8 marks)

An agricultural researcher conducted field trials to determine the effect of the previous crop on wheat yield in different crop rotations. The treatments compared were:

- Wheat following bare fallow (control)
- Wheat following lupins
- Wheat following canola
- Wheat following wheat

Each treatment was replicated four times.

The results of the experiment are shown in the table below.

Treatment	Wheat Yield (tonnes/ha)				
	Replications				Mean (tonnes/ha)
	1	2	3	4	
Following bare fallow (control)	2.8	3.1	2.9	3.2	
Following Lupins	3.7	3.2	3.3	3.6	
Following Canola	3.1	2.9	3.3	2.7	
Following Wheat	2.4	2.7	2.8	2.3	

What is the purpose of replication in an experiment? **2**

_____

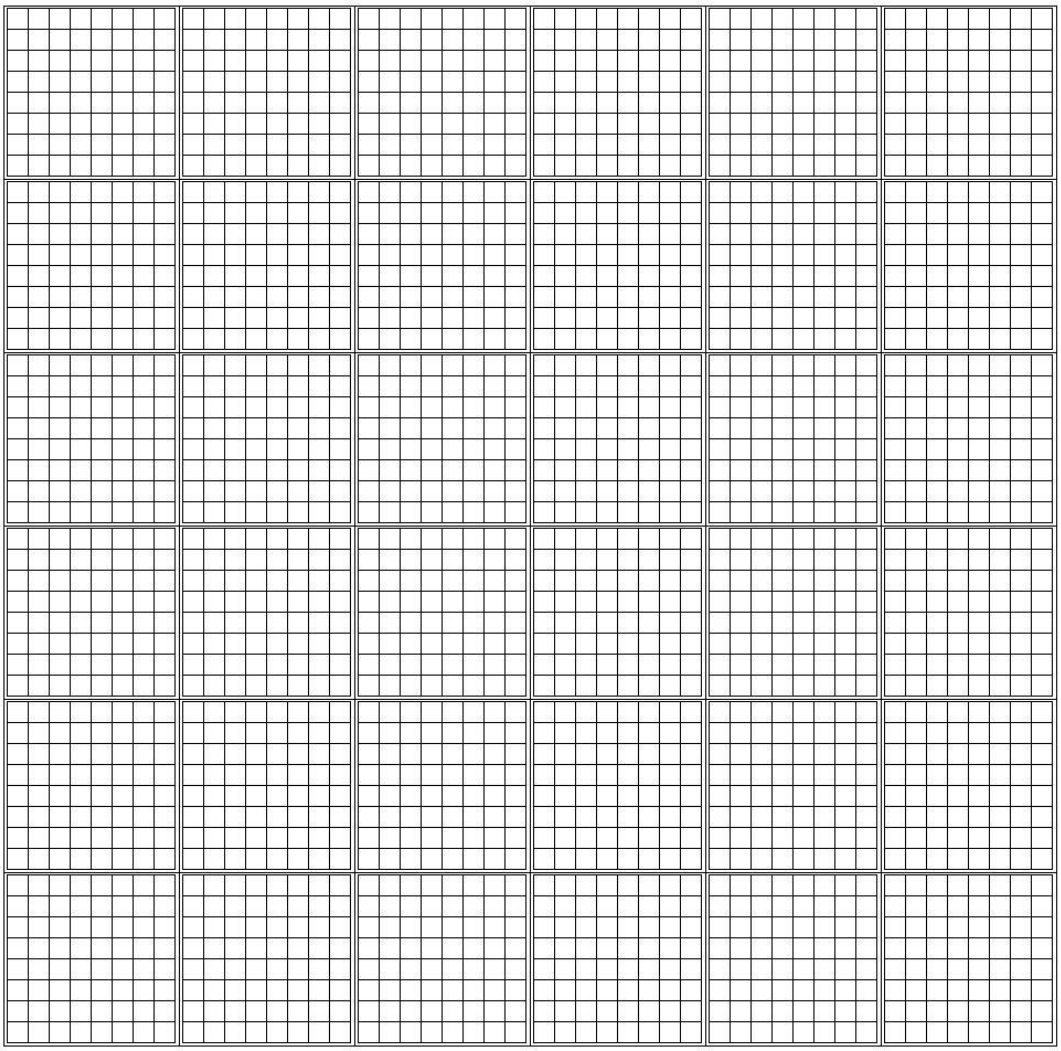
_____

(b) Calculate the mean for each of the treatments, place your answer in the table above. **2**

Question 26 continues on page 9

Question 26 (continued)

(c) Using the grid below, construct an appropriate graph, showing the mean yield for each of the treatments. **4**



End of Question 26

Question 27 (6 marks)

(a) Identify TWO environmental constraints that may affect plant growth, development and production**.** **2**

(i) _____

(ii) _____

(b) Explain, for the environmental constraints identified in part (a), how these constraints affect plant growth, development and production. **4**

Environmental Constraint (i) _____

_____

_____

_____

_____

Environmental Constraint (ii) _____

_____

_____

_____

_____

Question 28 (6 marks)

For a named plant pest/disease that you have studied, describe control strategies that could be used by the farmer. **6**

Name of plant Pest/Disease:_____

Question 29 (4 marks)

Graziers face the challenge of meeting livestock nutritional needs in the changing seasons of Australia.

Explain the significance of growing a pasture which contains a diverse mixture of pasture species. **4**

Section I Part B extra writing space

If you use this space, clearly indicate which question you are answering

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Agriculture

Section II

20 marks Attempt ONE question from Questions 30 - 32

Allow about 45 minutes for this section

Answer the question in the **Writing Booklet**. Extra writing booklets are available.

Your answers will be assessed on how well you:

- demonstrate knowledge and understanding relevant to the question
- communicate ideas and information using relevant examples
- present a logical and cohesive response

Question 30 — Agri-food, Fibre and Fuel Technologies (20 marks)

Answer the question in a Writing Booklet (s).

(a) In this elective, you analysed a research study on the development and/or the implementation of ONE agricultural biotechnology.

Identify this research study.

(i) What was the aim of the research study? **2**

(ii) Justify TWO aspects of the methodology of the research study. **6**

(b) Discuss the use of genetically modified organisms (GMOs) in food production. **12**

OR

Please turn over

Question 31 — Climate Challenge (20 marks)

Answer the question in a Writing Booklet (s).

(a) In this elective, you analysed a research study on climate variability or management strategies related to climate variability.

Identify this research study.

(i) What was the aim of the research study? **2**

(ii) Justify TWO aspects of the methodology of the research study. **6**

(b) Discuss management strategies farmers can use to deal with climate variability. **12**

OR

Question 32 — Farming in the 21st Century (20 marks)

Answer the question in a Writing Booklet (s).

(a) (i) Describe the roles of patents and plant breeders' rights in the research and development of new technologies. **4**

(ii) Propose reasons why a newly developed agricultural technology may NOT be widely adopted **4**

(b) In this elective, you have analysed a research study relating to the development and/or implementation of a recent agricultural technology.

Identify this research study, state a conclusion and a recommendation from this research.

Explain how the findings can be used in Australian agricultural production.

Explain how the design of this research contributed to the validity of its conclusions. In your answer, include specific examples. **12**

End of paper