



# Agricultural and Horticultural Studies

## Written examination – November

### Introduction

Sample examination questions have been developed to assess achievement in the revised study for Agricultural and Horticultural Studies.

The examination criteria and description were published in the *VCE Agricultural and Horticultural Studies Assessment Handbook 2006*.

The examination continues to contribute 34 per cent to the study score. The examination will not require students to demonstrate practical skills related to the production of their small business projects; however, knowledge and understanding of concepts, processes and practices related to production is examinable.

Teachers may refer to past examination papers for examples of questions where content is unchanged in the study design. Previous Assessment Reports on the written examination may also contain helpful advice.

The following sample material provides an indication of the type and range of questions teachers and students can expect on the Agricultural and Horticultural Studies examination in November 2006. It is not intended to form the basis of a sample examination paper.

Teachers should refer to the Examination section of the *VCE and VCAL Administrative Handbook 2006*, *VCE Agricultural and Horticultural Studies Assessment Handbook 2006* and to the *VCAA Bulletin* for further advice during the year.

### Structure and format

The examination paper will be in the form of a question and answer book and will require students to respond to a series of items related to Outcomes 1, 2 and 3 in Unit 3 and Outcomes 1, 2 and 3 in Unit 4. All of the key knowledge and key skills that underpin the outcomes are examinable.

The duration of the examination will be 1 1/2 hours.

All questions are compulsory. Short and extended responses will be required. In some questions students will be offered alternatives to cater for specific aspects of agriculture and horticulture students will have studied within the parameters of the study design. The examination paper may include items which refer to stimulus material such as newspaper articles, extracts from reports or case study material.

The marks for each outcome will be allocated in the following way. Total marks available will be 100.

Outcome	Marks allocated (%)
Unit 3 Outcomes 1–3	40–60
Unit 4 Outcomes 1–3	40–60

### Sample questions

The sample questions require responses of varying lengths. The marks in this sample material are provided as an indication of the length and detail of the response expected. The marks allocated to individual questions will vary from year to year and will be clearly stated below each question.

## Previous examination papers

Many questions in the 2002, 2003, 2004 and 2005 Agricultural and Horticultural Studies examination papers may be used as models for examination questions in 2006 and beyond. Please note that where the curriculum content in Units 3 and 4 has been revised the terminology in some questions may be inappropriate. Past examination papers can be downloaded from <http://www.vcaa.vic.edu.au/vce/studies/agrihorculture/Exams.html>

The questions below reflect the wording in the revised *Agricultural and Horticultural Studies VCE Study Design*.

## Unit 3, Outcome 1

### Question 1

Excessive algal growths are a problem (water management) in many farm dams and water supplies.

Describe **three** conditions that favour the formation of algal blooms in water storages.

3 marks

### Question 2

As algal blooms are difficult to treat, it is better to prevent them from occurring.

Explain **three** management principles that should guide **land management** practices aimed at minimising the risk of algal blooms forming in water storages.

6 marks

### Question 3

Bob, a nursery manager, measures environmental variables inside a glasshouse. He will use the recorded information to help him manage the growing environment in the glasshouse, because optimum conditions for plant growth help him to maximise productivity.

- List **three** environmental variables that Bob should measure and record.
- Explain how each variable should be analysed and used to guide management of the glasshouse.

3 + 6 = 9 marks

### Question 4

*(Note: Questions on specific weeds would be approached in the same way as pests have been on past examinations. That is, a list of common weeds would be given and students would select one and answer questions similar to the following. Teachers and students should refer to: [www.dpi.vic.gov.au](http://www.dpi.vic.gov.au))*

Select a weed from the list provided.

Weed \_\_\_\_\_

- What type of business is likely to be affected by this weed?
- Why is this weed a problem to this type of business?
- Successful long-term weed management programs involve the appropriate combination of a number of prevention and control methods.

Describe an integrated management approach to preventing and controlling your selected weed.

1 + 3 + 6 = 10 marks

## Unit 3, Outcome 2

*(Note: New and emerging technologies must be considered and compared with current practices. Students will select and name a commercial agricultural or horticultural business—see page 19 of the Agricultural and Horticultural Studies VCE Study Design. Students will choose an innovation in a technical area from a list provided.)*

In Unit 3 you studied equipment, techniques and processes that can be used to maintain and enhance the efficiency and effectiveness of agricultural and/or horticultural systems, including an available range of commonly used and innovative technologies.

Select and name a commercial agricultural or horticultural business \_\_\_\_\_

Select an innovation \_\_\_\_\_

Refer to these when answering Questions 5 and 6.

### Question 5

Discuss the impact of the innovation you selected on the agricultural or horticultural business.

8 marks

### Question 6

- List the practices currently used in this business.
- Describe new or emerging technologies that are replacing or changing these practices.
- Discuss the impact of these changes on business operation.

3 + 5 + 5 = 13 marks

## Unit 4, Outcome 2

### Question 7

Describe and explain **three** differences between a managed agricultural or horticultural ecosystem and a natural ecosystem.

5 marks

### Question 8

Describe how the ecological principle of ‘cycling of matter’ relates to agricultural or horticultural management.

5 marks

### Question 9

List **three** management practices you would use on a farm to prevent water storages from becoming turbid.

3 marks

### Question 10

Explain the management practices you would use on a farm to prevent water storages from becoming polluted by organic matter.

5 marks

### Question 11

How would you treat a water supply that had been polluted by organic matter?

3 marks

### Question 12

List **four** different methods used to assess water quality and explain why each is of importance to an agricultural or horticultural enterprise.

8 marks

### Question 13

It is June on a property in northeast Victoria. Kylie is walking back to the house from her lowest lying paddock. She is concerned because she has noticed another two trees are showing signs of 'dieback'. Several of the trees lower in the paddock are already dead.

- a. State the most likely type of environmental degradation.
- b. Explain **two** management principles which would assist in preventing it.
- c. What should the manager do to minimise the chance of this degradation occurring?

2 + 6 + 6 = 14 marks

## Unit 4, Outcome 3

### Question 15

Describe the steps involved in developing a property management plan to achieve sustainable production.

8 marks

### Question 16

Refer to the case study in Question 13. Suggest, with reasons, changes that would improve the property's ecological sustainability.

6 marks

### Question 17

Explain **three** reasons for the development of property management plans within the context of regional or catchment management plans.

6 marks

### Question 18

Describe **three** of the main purposes of the Catchment and Land Protection Act 1994 (Victoria).

6 marks

### Question 19

Explain the differences between the four categories of noxious weeds (State Prohibited Weeds, Regionally Prohibited Weeds, Regionally Controlled Weeds, Restricted Weeds) in Victoria.

8 marks

## Unit 4, Outcome 3

*(Note: This would normally be addressed as part of a case study. Any or all aspects of sustainability [environmental, financial, social; see Glossary – Agricultural and Horticultural Studies VCE Study Design, page 33] could be the focus of the question – use current exam.)*

### Question 20

The concept of sustainability is increasingly being applied as a standard to be achieved by agricultural and horticultural business managers.

- a. List the **three** areas of sustainability that managers should consider when planning their business activities.
- b. With regard to a particular agricultural or horticultural business explain, with examples, how each of these three areas influences the management of the business.

3 + 6 = 9 marks

## Unit 3, Outcome 3; Unit 4, Outcome 1

### Question 21

Explain the difference between a budget, a cash flow record and a profit and loss statement.

6 marks

### Question 22

Name the type of business you conducted \_\_\_\_\_

For this business type

- a. how is productivity measured?
- b. list the information that should be recorded to measure productivity.
- c. how would you test the effectiveness of changes made to the production system?

2 + 3 + 3 = 8 marks

### Question 23

Explain the importance of

- a. keeping a record of events that may affect a business, such as weather extremes, and unusual market fluctuations.
- b. understanding and monitoring
  - weather patterns
  - seasonal trends in market prices for inputs and end products
  - seasonal changes in productivity.

3 + 6 = 9 marks

## Unit 3, Outcome 3; Unit 4, Outcome 1

### Question 24

Explain what a partial budget is and why it is used to assess a change to a business's production methods.

5 marks

### Question 25

Bill is considering fertilising with an extra 20 kg/ha of urea on a 50 ha hay crop in July to produce an expected extra yield of 200 kg/ha. Urea costs \$320/t. Extra fuel and oil costs would be \$25 and haymaking costs \$10/t. The extra hay could be sold at \$80/t. Prepare a partial budget for Bill.

8 marks

### Question 26

A partial budget can be used to assess the financial viability of a new production technique. In order to decide if the new technique is sustainable, what other aspects would need to be considered?

4 marks

### Question 27

'For a business to be sustainable it must be profitable, but not all profitable businesses are sustainable.'

Using examples, discuss whether this statement is correct.

5 marks

### Question 28

- Explain the relationship between profitability and sustainability of a business.
- Give an example of how each may be affected both positively and negatively by the other.

5 + 4 = 9 marks

### Question 29

For your chosen agricultural or horticultural business type, explain what a manager must do to implement appropriate quality standards for this business.

6 marks

### Question 30

Explain how HACCP (Hazard Analysis Critical Control Point) principles could be incorporated into the management of a primary food production system.

5 marks

### Question 31

- Explain the procedures involved in risk management. Give an example of how these would be applied in an agricultural or horticultural business.
- List **four** broad types of risk that agricultural or horticultural business managers need to include in their planning.
- Give an example of each of **four** broad types of risk that may influence profitability of your chosen business type.

3 + 3 + 3 = 9 marks