

**2005 HSC Notes from
The Marking Centre
Agriculture**

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2005 HSC NOTES FROM THE MARKING CENTRE

AGRICULTURE

Introduction

This document has been produced for the teachers and candidates of the Stage 6 course in Agriculture. It provides comments with regard to responses to the 2005 Higher School Certificate examination, indicating the quality of candidate responses and highlighting the relative strengths and weaknesses of the candidature in each section and each question.

This document should be read along with the relevant syllabus, the 2005 Higher School Certificate examination, the marking guidelines and other support documents which have been developed by the Board of Studies to assist in the teaching and learning of Agriculture.

General Comments

In 2005, 1264 candidates attempted the Agriculture examination.

Teachers and candidates should be aware that as agriculture is an applied science, the knowledge, understanding and skills developed through the study of all syllabus sections should accumulate to a more comprehensive understanding than may be described in each section separately.

Examiners may ask questions that require candidates to respond by integrating their knowledge, understanding and skills developed through studying the entire course, rather than focusing on discrete syllabus ‘dot points’.

Paper 1

Section I

Question 1

- (a) The majority of candidates named a market specification for a particular product. Some candidates confused the market specification with the actual market place for the product eg stating ‘Jap Ox’ rather than a specific fat depth or presence of marbling in the meat.
- (b) Many candidates gained full marks as they could describe a management strategy that would enable the farmer to achieve the market specifications named in part (a). Weaker responses could not provide a feature of the strategy that linked it to meeting the market specification.
- (c) Better responses provided a reason for selling the product eg the perishable nature of the product or drought resulting in the lack of feed to support stock, and linked this clearly to the sale of the product even though the expected market specification identified in (a) was not met. Some candidates suggested the use of alternative markets when product quality was lower but could not articulate reasons why decisions were made to sell on such markets. Weaker responses could not offer a clear reason why the decision to sell was made.
- (d) Better responses proposed a relevant management operation, related it to the profitability of the named product and linked its effect on profitability clearly to the timing of the operation. Many candidates either identified an operation and linked it to profitability or identified an operation and mentioned timing; in neither case was a full explanation provided. Weaker

responses did not relate their chosen operation to profitability and often confused the timing of the operation with the time taken to carry out the operation.

Question 2

- (a) Candidates scoring maximum marks were able to identify a specific farming practice that affected waterways and provide a suitable description eg fertiliser being washed into waterways resulting in eutrophication and subsequent increase in algae or weed growth leading to the death of aquatic animals and water toxicity. Weaker responses lacked specificity eg citing ‘pollution’ causing a loss of water quality.
- (b) The majority of candidates identified burning/firestick farming as an Aboriginal land management practice; most then identified a related effect on the environment such as an expansion of grass land habitats and species adapted to fire.
- (c) Most candidates were able to identify two valid farming practices contributing to their named soil degradation problem.
- (d) An identification of a farming practice that could be employed to address the named degradation problem was provided by many candidates. Better responses provided the features of the farming practice eg planting deep rooted trees or salt tolerant crops such as saltbush in saline affected areas. Maximum marks could only be awarded if a link was made in reference to their use in overcoming the problem eg such deep rooted plants lowering the water table and removing salt-laden water from the plants root zone, thus explaining the use of the farming practice.

Question 3

- (a) A large majority of candidates were able to correctly calculate the mean of each treatment. Some, however, had difficulty extracting data from the graph provided. Some obviously did not bring a calculator to the examination.
- (b) Most candidates were able to correctly state that the results for pesticide A were more variable than those for pesticide B. They either identified a larger range of results for pesticide A or noted that the results for pesticide A had a larger standard deviation. Some candidates assumed that because the mean of the results for the two pesticides were identical that there was no variation between them.
- (c) Better responses proposed three distinct and relevant further actions based on the trial presented to them eg repeating the trial at different locations or at different times to test the effect of environmental variations on the effectiveness of the two pesticides and including a control in the experimental design such as no pesticide application at each site as well as assessing the cost of each pesticide.

Weaker responses could only propose one or two relevant actions. Some simply used the terms ‘replication’, ‘standardisation’ or ‘randomisation’ without reference to any further actions that might be taken by the researcher.

Section II

Question 4

- (a) Most candidates identified a pest or disease and described its effect on a named animal production system. Responses that referred to a plant production system were awarded no marks.
- (b) Better responses clearly linked resistance in pest populations changing over time (several generations), with the survival of resistant organisms and the subsequent inheritance in their offspring, of genes that conferred resistant characteristics. Weaker responses concentrated on the initial mechanism of chemical resistance without including the changes expected in the pest population over time.
- (c) Better responses explained the use of various strategies in effective combinations when implementing IPM. Responses in the lower mark range outlined IPM in general terms only.
- (d) Candidates who identified and expanded on production and animal welfare issues related to the introduction of a new technology scored in the highest mark range. Weaker responses named technologies or identified animal welfare issues without relating these to changes in production.

Question 5

- (a) The majority of responses answered this part correctly.
- (b) Most responses provided the features of a relevant method to control waterlogging. Lower marks were awarded to those that listed or outlined a method to reduce the problem.
- (c) Better responses related high weed seed levels with greater weed populations and hence greater competition for water, nutrients, and light in the crop. Weaker responses made no link to the cropping system.
- (d) Maximum marks were awarded to responses that explained the role of legumes fixing nitrogen in relation to benefiting crops in a rotation eg extra nitrogen from legume phase used by a following wheat crop to increase protein content and yield of grain. Weaker responses did not make the link to the crop in rotation.
- (e) Better responses gave a clear outline of minimum tillage and discussed at least two associated advantages and disadvantages.

Section III

Question 6

Approximately 33% of candidates attempted this question. In general, both parts of the question were answered well, indicating a solid understanding of factors affecting farm incomes, and the various marketing strategies that farmers are able to utilise.

- (a) This part was well answered by the majority of candidates. A substantial proportion of the candidates were able to describe two factors that lead to irregular farm income. The better responses included the key features in their descriptions.
- (b) Almost all responses were able to describe two valid marketing strategies. Better responses were able to include an implication for each strategy, and illustrate it with examples to show how farmers are able to maximise farm income. Most candidates were able to identify the key components of the marketing strategies that they described.

Question 7

Approximately 41% of candidates attempted this question. Overall the question was well answered. The analysis, where the implications of selected plant management strategies were to be illustrated, was least well answered.

- (a) Most candidates were able to outline two factors that farmers needed to consider before choosing a crop. Better responses provided characteristics and key features of both factors stated. Many candidates scored maximum marks in this part.
- (b) The majority of candidates were able to identify two or more management strategies. Many candidates were able to outline two or three management strategies. Better responses provided examples with two or more implications of those strategies stated. Some candidates did not select strategies to maximise plant genetic potential but focused on altering the plant's genetics.

Question 8

Approximately 8% of candidates attempted this question. Generally the question was not well interpreted, hence many responses scored in the mid-to lower-mark range.

- (a) Most candidates outlined changes in animals from birth to maturity and related this to changing nutritional needs. Few responses provided sufficient descriptive detail or specified changes in both protein and energy that were needed as the animal aged.
- (b) The majority of candidates nominated a farm animal and outlined key features of its production cycle. Many were able to outline issues relating to the protein and energy needs of the named animal over this cycle. Very few responses made any analysis of the role of pastures in meeting the nutritional requirements proposed.

Question 9

Approximately 18% of candidates attempted this question.

- (a) The majority of candidates were able to name two uses of computer technology in farm management and to give a clear description containing key features of the technology. Weaker responses were still able to name the technology but without a clear description of its use or features.
- (b) A high proportion of respondents were able to name three or more sources of information used by farmers and present a description of its use in decision-making as well as identifying the key components of each source. Weaker responses only gave a brief outline of some types of information and did not distinguish between the source and type of information farmers needed to make management decisions. Better responses were able to articulate multiple implications rather than simply mentioning costs or unreliability.

Paper 2

Approximately 96% of candidates who sat Paper 1 attempted Paper 2.

Part (a) of all questions required candidates to describe the research methodology of a study related to the particular Elective, as per the syllabus. Generally, candidates who had knowledge of a particular piece of relevant research (a ‘study’) were able to provide an adequate description of its method. A considerable number of candidates still do not appear to have covered this section of the syllabus well and were unable to answer the question, as they did not understand the concept of ‘a study’.

A significant number of responses could have more clearly displayed a thorough understanding of the elective content in parts (b) and (c). Some better responses explained points as required and were able to identify key issues and discuss these. Weaker responses provided only basic outlines and discussions, often failing to cover relevant issues.

Question 1 – Agribusiness

Approximately 7% of elective candidates attempted this question.

- (a) Most candidates did not identify a valid research method that was used in a study. Many candidates identified a study or survey that they themselves had carried out.
- (b) The majority of candidates were able to identify methods that could be used to develop new international markets. Common answers included advertising and promotion. Many candidates were unable to explain how these strategies could develop new international markets. Some candidates described strategies such as value adding, and improving quality, without reference to an international market. Responses that were awarded maximum marks were able to explain the effect of such things as advertising, industry body marketing campaigns, and government initiatives on the development of a new international market for a named product.
- (c) To gain maximum marks candidates needed to identify at least two sources of finance and be able to discuss each source. A number of candidates identified types of finance eg loans, mortgages and overdrafts rather than sources of finance. A small number of candidates

discussed ways of increasing farm income eg value-adding, diversification or off-farm jobs. Candidates discussing types of finance without relating it to a source, or discussing ways of increasing farm income, were not awarded marks.

Question 2 – Animal Management

Approximately 80% of candidates attempted this question.

- (a) The majority of responses did not accurately identify a suitable research study, resulting in low range marks (if any) when required to describe the method related to the study. Non-attempts were commonplace.

NB: A ‘technology’ and a ‘technique’ were treated similarly when marking this question.

- (b) Most candidates were able to adequately identify and explain several practices. However, relating the practice to increased reproductive efficiency was not particularly well done.

Better responses explained this relationship well.

- (c) The majority of candidates were able to adequately identify and describe at least two disease control methods.

Mid-range responses identified, but inadequately discussed, the issues associated with the control methods eg mulesing of sheep causes pain.

High scoring responses included a description of the disease control methods and included a range of points for and against the issues raised when dealing with the control methods.

Question 3 – Horticulture

Approximately 10% of candidates attempted this question.

- (a) Most respondents identified a technology associated with the horticultural industry; however, the majority did not name a research study and did not describe the methodology associated with the study eg randomisation, replication, control.

- (b) Weaker responses did not correctly identify plant propagation techniques.

Mid-range responses identified plant propagation techniques, but they did not link these techniques to increased production.

High scoring responses correctly identified two plant propagation techniques and related these to increased production.

Many candidates demonstrated a lack of understanding of the term ‘propagation’.

- (c) Weaker responses identified a range of technologies and provided limited characteristics of each.

Mid-range responses identified ONE technology and a variety of characteristics of that technology. They also discussed a positive or negative effect of this technology.

Higher scoring responses clearly identified two or more technologies and provided characteristics of these. They also discussed both positive and negative effects on the horticulture industry.

Question 4 – Diversification

Approximately 9% of candidates attempted this question.

- (a) Most candidates were able to name a study relating to the implementation of an alternative agricultural production system or technology.

Better responses described in detail the research method used in the study including features such as randomisation, replication, standardisation and the use of a control, ie sound experimental procedure.

- (b) Most candidates were able to name two factors that lead to the development of alternative agricultural production systems or technological innovation. Examples included diversity farm income, increases in efficiency on the farm via technology, targeting expanding niche markets etc.

Higher scoring responses clearly explained how these factors lead to the development of alternative systems or technological innovations giving specific examples.

- (c) Most candidates were able to state issues involved in the introduction of alternative agricultural production systems or technologies into farm business. Examples included issues such as animal welfare, environmental considerations, farmer knowledge base, potential markets/marketing, public perception etc.

Higher scoring responses elaborated and discussed these issues in detail using specific examples to support their argument.

Question 5 – Plant Management

Approximately 36% of candidates attempted this question.

- (a) Better responses named a specific published plant study and gave evidence of the experimental method in the study. Higher scoring responses named and described a specific published plant study including standardisation, randomisation, replication, sampling and further details of the experimental layout.

- (b) Most responses described technologies such as greenhouses, irrigation, genetic modification, minimum till and stubble mulching and explained how these technologies improved the management of environmental factors in a plant production system. Better responses linked each technology with a specific environmental factor eg moisture, carbon dioxide levels, light intensity, drought resistance. Examples of both old and new technologies were accepted. Many responses did not link the technology to the improved management of environmental factors.

- (c) Better responses were able to identify and make a statement about two specific issues associated with genetic engineering and make at least two valid points for and/or against each of the two issues. Better responses provided a balanced mix of advantages and disadvantages supported by specific genetic modification examples such as BT cotton, genetically

engineered tomatoes, cabbages, non-bruising potato, leaf roll virus and strawberries with fish genes to combat frost.

Question 6 – Sustainable Management

Approximately 58% of candidates attempted this question.

- (a) A majority of candidates identified a research study and related it to the efficient use of water in agriculture. Better responses provided features of the experimental design used in the trial.
- (b) Most candidates could identify two innovative technologies, give features of each and relate their implementation to increased sustainability in agriculture production systems.
- (c) Weaker responses identified issues related to water use. Better responses identified two or more issues directly related to the TCM approach eg need for co-operation between all stakeholders in the catchment, and provided points for and/or against TCM's ability in each case to provide sustainable water management.

Optional Research Project

Approximately 4% of the 2005 HSC Agriculture candidature submitted a research project in lieu of studying two elective topics and attempting Paper 2.

A range of research topics were presented, and both quantitative (a large majority) and qualitative research methodologies were represented.

Projects that gained high marks were characterised by:

- the selection of a relevant agricultural problem
- the statement of a clear research question
- the use of appropriate experimental design, data collection and data analysis
- appropriate conclusions drawn from the data collected and meaningful recommendations emanating from the research question and findings
- flexibility in drawing conclusions and responding to unexpected findings, trends and outcomes of the research
- good structure, ie the project was within the 3000 – 5000 word limit and presented cohesively
- the inclusion of a properly referenced, concise and relevant literature review that focused directly on previous research associated with the research question. Reviewed literature was referred to throughout the project and not presented in isolation
- consideration of ethical and welfare issues related to the research conducted
- the inclusion of a precise synopsis of the research and an accurate bibliography
- appropriate acknowledgement of all sources, collaboration and assistance

The highest scoring projects were accompanied by process journals that clearly detailed the candidate's progress in developing and conducting the research as well as the assistance sought during the process.

Weaker projects often did not articulate a clearly defined research question that was relevant to modern agriculture. In these projects the research methodology, data collection techniques and data analysis often contained serious flaws. Some candidates measured variables that were inappropriate for answering the research question posed. This reflected poor organisation and lack of time in the

planning and conduct of the research. In a significant number of projects the section on Ethical and Welfare considerations was missing. Coupled with the absence of a process journal, this suggested that these candidates may not have been fully aware of the project requirements detailed in the syllabus.

Many projects contained a weak literature review. They presented all the information about the topic in general and were not directly related to the research question. Many candidates did not refer to previous research. It should be noted that the recency and relevance of the literature reviewed is critical. The quantity of material presented is not important. The literature review should discuss previous research in relation to the issue or problem that is the subject of the research and attempt to outline the current state of knowledge about the issue under investigation. Higher-scoring projects not only presented relevant literature reviews, but also related their own findings back to those of other researchers. These projects were well organised and demonstrated a clear understanding of the role of the literature review in a research project.

Many of the weaker quantitative projects displayed poor experimental design — too many variables, inadequate replication, lack of randomisation and poor attention to standardisation of conditions. Some qualitative studies used an inadequate sample size, leading to less meaningful results and then making it difficult for the candidate to draw conclusions and write discussions. Poor experimental design then hindered the analysis of the results and the development of meaningful conclusions. Projects with such flaws rarely acknowledged this error or provided suitable recommendations to rectify faults in future research. Candidates undertaking survey-based research should be advised that there are well-documented strategies and conventions for designing questions. Surveys often lacked a large enough sample size or were extremely biased in their sampling technique.

The analysis of the statistics collected should clearly show that the candidate understands the analysis and doesn't merely regurgitate information. The analysis must be appropriate for the data collected. Too many candidates perform an analysis of variance in a trial with several variables, find some significant differences in the data but then fail to analyse where the significant differences occur. Many find no significant differences between treatments but then go on to make statements about differences between treatments in their conclusions and discussion of results. Clearly, these candidates do not understand the purpose of statistical analysis of their results.

Many candidates presented poor referencing in their projects with no clear link from the text to the details in the reference section. Often website references were not dated. It should be noted that where a website provides a window to a publication, the publication should be cited, not the website. Highest quality literature reviews were produced by candidates that referenced current material from a wide range of sources of different types.

The presentation of data should be ethical and unbiased. In the presentation of data, many candidates continue to present discontinuous scales on graphs. This makes results look more significant, but it is not an accurate presentation of data. Where histograms are used, candidates should be encouraged to include standard deviations or standard errors on the graph. Some candidates attempt to pad out results by presenting the same data in several graphical forms or present graphs of raw data on each experimental group rather than a final graph to compare means of each treatment. An example would be line graphs which show the growth of every animal in each treatment group rather than one in which the mean of the animals in each group are compared. In many cases line graphs were inappropriately used to represent discontinuous data.

Candidates should be encouraged to develop an original research question, and not one very similar to other candidates from their own centre. Journal entries also suggested the 'recycling' of project

topics from a school's previous years' candidates. This does not help to generate original research. Projects that centred on plants selected for quick growth rather than agricultural importance were all too common and often reflected a late start date for projects. Many projects scoring low to mid-range marks investigated questions that were extremely simplistic or had obvious outcomes eg the effect of changing protein levels on animal growth, NPK fertiliser effects on plants, comparisons of common products and techniques with well-documented effects, and investigations into the effects of basic inputs. The subjects of some projects reflected little knowledge of commercial agriculture by selecting a topic for investigation that had little or no relevance to the real-life situation. A few candidates simply submitted a report, describing a topic without conducting any experimental investigation. The lack of 'research' in these research projects understandably resulted in very low marks, despite the volume of material presented.

Many of the better projects indicated in their journals that they had had regular consultation with their agriculture teacher and other experts to monitor experimental design, statistical analysis and their research for the literature review. These better projects used the journal appropriately, documenting field notes, raw results, interview notes and reflections of the candidate. When used correctly they provide an excellent window into the candidates' development as they research, carry out the trial and grapple with the final write-up. These journals should not be typed up and presented as a polished document bound with the project. Ideally they should be raw diaries, in exercise or note books, reflecting the passage of time and the development of the candidates work. Simple tables where teachers sign off components of the write up as in the old '3 unit Project Log' are not suitable as process journals.

If candidates are to be involved in research carried out by others it must be clear that they had substantial input into design, data collection and analysis. Ideally they should be involved from the inception of the research. At a minimum, they should play a substantial role in the collection of experimental data.

Agriculture Paper 1

2005 HSC Examination Mapping Grid

Question	Marks	Content	Syllabus outcomes
Section I			
1 (a)	1	Product Study	H3.2
1 (b)	2	Product Study	H3.4
1 (c)	2	Product Study	H3.1
1 (d)	4	Product Study	H3.4
2 (a)	2	Sustainable Agriculture Production	H1.1
2 (b)	2	Sustainable Agriculture Production	H1.1
2 (c)	2	Sustainable Agriculture Production	H1.1
2 (d)	3	Sustainable Agriculture Production	H1.1
3 (a)	2	Experimental Research	H4.1
3 (b)	2	Experimental Research	H4.1
3 (c)	3	Experimental Research	H4.1
Section II			
4 (a)	2	Microbes and Invertebrates	H2.2
4 (b)	3	Microbes and Invertebrates	H2.2
4 (c)	4	Microbes and Invertebrates	H2.2
4 (d)	6	Animal Production	H2.2
5 (a)	2	Sustainable Agriculture Production	H1.1, H2.1
5 (b)	2	Sustainable Agriculture Production	H1.1, H2.1
5 (c)	2	Plant Production	H2.1
5 (d)	3	Plant Production	H2.1
5 (e)	6	Sustainable Agriculture Production	H1.1, H2.1

Question	Marks	Content	Syllabus outcomes
Section III			
6 (a)	5	Farm Product Study	H3.1, H3.2
6 (b)	10	Farm Product Study	H3.1, H3.2
7 (a)	5	Plant Production	H2.1
7 (b)	10	Plant Production	H2.1
8 (a)	5	Animal Production	H2.2
8 (b)	10	Animal Production	H2.2
9 (a)	5	Farm Decision-making	H3.1, H3.2, H3.3
9 (b)	10	Farm Decision-making	H3.1, H3.2, H3.3

Agriculture Paper 2

2005 HSC Examination Mapping Grid

Question	Marks	Content	Syllabus outcomes
Question 1 — Agribusiness			
1 (a)	3	Research methodology	H4.1
1 (b)	4	Innovation—ethics	H5.1
1 (c)	8	Process management	H3.4
Question 2 — Animal Management			
2 (a)	3	Research methodology	H4.1
2 (b)	4	Innovation—ethics	H5.1
2 (c)	8	Process management	H3.4
Question 3 — Horticulture			
3 (a)	3	Research methodology	H4.1
3 (b)	4	Innovation—ethics	H5.1
3 (c)	8	Process management	H3.4
Question 4 — Innovation and Diversification			
4 (a)	3	Research methodology	H4.1
4 (b)	4	Innovation—ethics	H5.1
4 (c)	8	Process management	H3.4
Question 5 — Plant Management			
5 (a)	3	Research methodology	H4.1
5 (b)	4	Innovation—ethics	H5.1
5 (c)	8	Process management	H3.4
Question 6 — Sustainable Land and Resource Management			
6 (a)	3	Research methodology	H4.1
6 (b)	4	Innovation—ethics	H5.1
6 (c)	8	Process management	H3.4

2005 HSC Agriculture Paper 1 Marking Guidelines

Section I

Question 1 (a)

Outcomes assessed: H3.2

MARKING GUIDELINES

Criteria	Marks
• Lists ONE appropriate market specification for the named product	1

Question 1 (b)

Outcomes assessed: H3.4

MARKING GUIDELINES

Criteria	Marks
• Identifies the management task/process and the feature(s) of the task/process which enables the market specification to be achieved	2
• Identifies a management task/process which assists the specified market specification	1

Question 1 (c)

Outcomes assessed: H3.1

MARKING GUIDELINES

Criteria	Marks
• States the reason for selling and links this to the market specification in some way	2
• States or lists a reason for selling	1

Question 1 (d)*Outcomes assessed: H3.4***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Relates the way in which the management operation and the critical timing period interact to create the profitability of the named product	4
<ul style="list-style-type: none">Names a management operation and identifies a profitability factor and states the critical timing period OR <ul style="list-style-type: none">Relates management to timing OR <ul style="list-style-type: none">Relates management to profitability	3
<ul style="list-style-type: none">Names a management operation AND <ul style="list-style-type: none">States a critical timing period OR <ul style="list-style-type: none">Identifies a factor related to profitability	2
<ul style="list-style-type: none">Names a management operation	1

Question 2 (a)*Outcomes assessed: H1.1***MARKING GUIDELINES**

Criteria	Marks
• Provides characteristics and features of the effect of farming on waterways	2
• Identifies an affect of farming on waterways	1

Question 2 (b)*Outcomes assessed: H1.1***MARKING GUIDELINES**

Criteria	Marks
• Identifies an Aboriginal land management practice and identifies its affect on the environment	2
• Identifies an Aboriginal land management practice OR • Identifies an affect on the environment	1

Question 2 (c)*Outcomes assessed: H1.1***MARKING GUIDELINES**

Criteria	Marks
• Lists TWO farming practices that have caused soil degradation	2
• States ONE farming practice that has caused soil degradation	1

Question 2 (d)*Outcomes assessed: H1.1***MARKING GUIDELINES**

Criteria	Marks
• Outlines in some detail the characteristics of the practice, giving reasons for how it reduces the degradation	3
• Identifies the characteristics of the farming practice	2
• Names a farming practice	1

Question 3 (a)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
• 40 locusts per/unit area (or 40) for both treatments	2
• 40 locusts/unit area (or 40) for either treatment	1

Question 3 (b)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
• Identifies that Pesticide A has far more variability of data than that of Pesticide B. Some could compare SDs	2
• Identifies generally that they are different	1

Question 3 (c)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
• Suggests THREE appropriate actions	3
• Suggests TWO appropriate actions	2
• Suggests an appropriate action	1

Section II

Question 4 (a)

Outcomes assessed: H2.2

MARKING GUIDELINES

Criteria	Marks
• Identifies a pest/disease of a specified animal production system and the characteristics of its effect on the system	2
• Identifies a pest/disease of a specified animal production system	1

Question 4 (b)

Outcomes assessed: H2.2

MARKING GUIDELINES

Criteria	Marks
• Outlines the cause of chemical resistance and the effect on the population and makes the link between them	3
• Outlines the cause of chemical resistance OR • Outlines the effect on the population	2
• Correct statement about impact of chemical	1

Question 4 (c)

Outcomes assessed: H2.2

MARKING GUIDELINES

Criteria	Marks
• Identifies a pest/disease, outlines a range of control strategies, relates strategies to the three areas of host, environment and pest and recognises that by managing a range of interactions, total control is more effective	4
• Identifies a pest/disease and outlines more than one control strategy and begins to relate the need to use a range of strategies to make control more effective. • Identifies elements of host, environment and pest	3
• Identifies a pest/disease and indicate more than one control strategy OR • Provides a general outline of IPM, including more than one control strategy, without reference to a particular pest or disease	2
• Indicates one control strategy	1

Question 4 (d)

Outcomes assessed: H2.2

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Identifies at least two changes in production methods that have come about due to new technology and animal welfare issues (one change needs to be related to new technology and one related to animal welfare) • Describes the changes to the production system in each case • Draws out the implications of these changes to one or more of farms/farmers/communities/systems 	5–6
<ul style="list-style-type: none"> • Identifies at least two changes in production methods that have come about due to new technology and animal welfare issues (one change needs to be related to new technology and one related to animal welfare) • Describes the changes to the production system in each case OR • Identifies ONE change in production method that has come about due to new technology OR animal welfare AND • Describes the changes to the production system AND • Draws out implications of the changes to farms/farmers/communities/systems 	3–4
<ul style="list-style-type: none"> • Identifies at least two changes in production methods that have come about due to new technology and animal welfare issues (one change needs to be related to new technology and one related to animal welfare) OR • Identifies one change in production method and describes the change to the production system related to either technology or animal welfare 	1–2

Question 5 (a)*Outcomes assessed: H1.1, H2.1***MARKING GUIDELINES**

Criteria	Marks
• Identifies TWO legume crops from the table that match the criteria	2
• Identifies ONE legume crop from the table that matches the criteria	1

Question 5 (b)*Outcomes assessed: H1.1, H2.1***MARKING GUIDELINES**

Criteria	Marks
• Identifies one method to reduce waterlogging and provides characteristics and features of this method	2
• Identifies one method to reduce waterlogging of soils	1

Question 5 (c)*Outcomes assessed: H 2.1***MARKING GUIDELINES**

Criteria	Marks
• Provides characteristics and features of an effect of high weed seed levels on cropping systems	2
• Identifies an effect of high weed seed levels on cropping systems	1

Question 5 (d)*Outcomes assessed: H 2.1***MARKING GUIDELINES**

Criteria	Marks
• Relates a role of legumes to the effect that legumes have on crop rotation systems	3
• Outlines in general terms a role of legumes in crop rotation systems	2
• Identifies a role of legumes in crop rotation systems	1

Question 5 (e)*Outcomes assessed: H 1.1, H 2.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Outlines the role of minimum tillage systems in managing soil structure and provides a number of points both for and against the use of minimum tillage in cropping systems	5–6
<ul style="list-style-type: none">• Provides a number of points both for and against the use of minimum tillage in cropping systems OR• Outlines the role of minimum tillage in managing soil structure with one or two points for or against the use of minimum tillage	3–4
<ul style="list-style-type: none">• Provides one or two points either for or against the use of minimum tillage OR• Outlines minimum tillage is aimed at managing soil structure	1–2

Section III

Question 6 (a)

Outcomes assessed: H3.1, H3.2

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Produces the characteristics and key features of TWO factors that lead to irregular farm income 	5
<ul style="list-style-type: none"> Outlines TWO factors that lead to irregular farm income OR Outlines ONE factor leading to irregular farm income and identifies another factor 	3–4
<ul style="list-style-type: none"> Identifies ONE or TWO factors leading irregular farm income OR Outlines ONE factor leading to irregular far income 	1–2

Question 6 (b)

Outcomes assessed: H3.1, H3.2

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Identifies the key components of at least TWO marketing strategies used to maximise farm income AND Produces examples to illustrate more than one implication for each of these strategies used to maximising farm incomes 	9–10
<ul style="list-style-type: none"> Identifies the key component of at least TWO marketing strategies used to maximise farm income AND Illustrates an implication of each strategy using an example 	7–8
<ul style="list-style-type: none"> Outlines TWO or THREE marketing strategies and illustrates an implication of at least ONE of these OR Identifies key components of ONE marketing strategy and provides examples to illustrate the implications of this strategy used to maximise farm incomes 	5–6
<ul style="list-style-type: none"> Identifies THREE or outlines TWO marketing strategies used to maximise farm incomes OR Illustrates the implications of ONE or TWO identified marketing strategies used to maximise incomes 	3–4
<ul style="list-style-type: none"> Identifies ONE or TWO marketing strategies used to maximise farm income 	1–2

Question 7 (a)
Outcomes assessed: H2.1
MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Provides the characteristics and key features of TWO factors that need to be considered before choosing to grow a crop 	5
<ul style="list-style-type: none"> Outlines TWO factors that need to be considered before choosing to grow a crop OR Outlines ONE factor that needs to be considered before choosing to grow a crop and identifies another factor 	3–4
<ul style="list-style-type: none"> Identifies ONE or TWO factors that need to be considered before choosing to grow a crop OR Outlines ONE factor that needs to be considered before choosing to grow a crop 	1–2

Question 7 (b)
Outcomes assessed: H2.1
MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Identifies the key components of at least TWO management strategies to ensure a plant reaches its genetic potential AND Provides examples to illustrate more than one implication for each of these strategies used to ensure a plant reaches its genetic potential 	9–10
<ul style="list-style-type: none"> Identifies the key components of at least TWO management strategies used to ensure a plant reaches its genetic potential AND Illustrates an implication of each strategy using an example 	7–8
<ul style="list-style-type: none"> Outlines TWO or THREE management strategies and illustrates an implication of at least ONE of these OR Identifies key components of ONE management strategy and provides examples to illustrate the implications of this strategy to ensure a plant reaches its genetic potential 	5–6
<ul style="list-style-type: none"> Identifies THREE or outlines TWO management strategies used to ensure a plant reaches its genetic potential OR Illustrates the implication of ONE or TWO identified management strategies used to ensure a plant reaches its genetic potential 	3–4
<ul style="list-style-type: none"> Identifies ONE or TWO management strategies farmers use to ensure a selected crop reaches its genetic potential 	1–2

Question 8 (a)*Outcomes assessed: H2.2***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Provides the characteristics and features associated with the changing requirements from birth to maturity for both protein and energy	5
<ul style="list-style-type: none">Outlines the changing requirements for both protein and energy from birth to maturity ORProvides characteristics and features associated with the changing requirements for either protein or energy ANDIdentifies the changing requirements for the other	3–4
<ul style="list-style-type: none">Identifies the changing requirements for protein and energy OROutlines the changing requirement for either protein or energy	1–2

Question 8 (b)
Outcomes assessed: H2.2
MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Identifies at least TWO key issues related to the provision of both protein and energy by pastures for the production cycle of a named animal AND • Provides examples to illustrate more than one implication for each of these issues related to a pasture's ability to provide protein energy 	9–10
<ul style="list-style-type: none"> • Identifies at least TWO key issues related to the provision of both protein and energy by pastures for the production cycle of a named animal AND • Illustrates an implication of each key issue using an example 	7–8
<ul style="list-style-type: none"> • Outlines TWO or THREE key issues related to the provision of both protein and energy by pastures for the production cycle of a named animal and illustrates an implication of at least one of these OR • Identifies ONE key issue and provides examples to illustrate more than one implication for each of these issues related to a pasture's ability to provide energy and protein 	5–6
<ul style="list-style-type: none"> • Identifies THREE or outlines TWO key issues related to the provision of both protein and energy by pastures OR • Illustrates the implication of ONE or TWO key issues related to the provision at both protein and energy by a pasture 	3–4
<ul style="list-style-type: none"> • Identifies ONE or TWO key issues related to the provision of protein or energy by pastures for the named animal 	1–2

Question 9 (a)

Outcomes assessed: H3.1, H3.2, H3.3

MARKING GUIDELINES

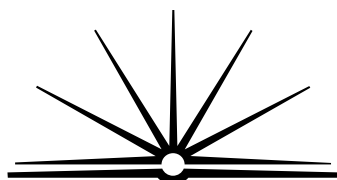
Criteria	Marks
<ul style="list-style-type: none"> Provides the characteristics and key features of TWO ways a farmer may use computer technology in farm management 	5
<ul style="list-style-type: none"> Outlines TWO ways a farmer may use computer technology in farm management OR Outlines ONE way a farmer may use computer technology in farm management and identifies another way 	3–4
<ul style="list-style-type: none"> Outlines ONE way a farmer may use computer technology in farm management OR Identifies ONE or TWO ways a farmer may use computer technology in farm management 	1–2

Question 9 (b)

Outcomes assessed: H3.1, H3.2, H3.3

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Identifies the key components of at least TWO sources of information to assist farm management and decision making AND Provides examples to illustrate more than one implication of using each source of information 	9–10
<ul style="list-style-type: none"> Identifies the key components of at least TWO sources of information to assist farm management and decision making AND Illustrates an implication of using each source of information using examples 	7–8
<ul style="list-style-type: none"> Outlines TWO or THREE sources of information and illustrates an implication for the use of at least one of these sources OR Identifies key components of ONE source of information and provides examples to illustrate more than one implication of using each source of information 	5–6
<ul style="list-style-type: none"> Identifies THREE or outlines TWO sources of information farmers may use to assist farm management and decision making OR Illustrates the implication of using ONE or TWO sources of information 	3–4
<ul style="list-style-type: none"> Identifies ONE or TWO sources of information farmers may use to assist farm management and decisions making 	1–2



B O A R D O F S T U D I E S
NEW SOUTH WALES

2005 HSC Agriculture Paper 2 Marking Guidelines

Question 1 (a)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Identifies the nature and purpose of the study in relation to the impact of a rural business on an agricultural industry AND <ul style="list-style-type: none">• Provides characteristics and features of the method used in the study	3
<ul style="list-style-type: none">• Identifies the nature and purpose of the study in relation to the impact of a rural business on an agricultural industry AND <ul style="list-style-type: none">• Sketches in general terms some of the aspects of this method used in the study	2
<ul style="list-style-type: none">• Identifies the nature and purpose of the study in relation to the impact of a rural business on an agricultural industry AND <ul style="list-style-type: none">• States the research method used	1

Question 1 (b)
Outcomes assessed: H5.1
MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Identifies TWO methods that could be used to develop new international markets AND • Relates both of these methods to their role in developing new international markets 	4
<ul style="list-style-type: none"> • Identifies TWO methods that could be used to develop new international markets AND • Relates ONE of these methods to its role in developing new international markets 	3
<ul style="list-style-type: none"> • Provides the characteristics and features of TWO methods that could be used to develop new international markets OR • Provides characteristics and features of ONE method AND • Relates the method to its role in developing new international markets 	2
<ul style="list-style-type: none"> • Provides the characteristics and features of ONE method that can be used to develop new international markets OR • Identifies TWO methods that can be used to develop new international markets 	1

Question 1 (c)
Outcomes assessed: H3.4
MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Identifies TWO sources of finance AND • Provides points for and against each source of finance listed 	7–8
<ul style="list-style-type: none"> • Identifies TWO sources of finance AND • Provides points for and against ONE source of finance 	5–6
<ul style="list-style-type: none"> • Provides characteristics and features of TWO sources of finance 	3–4
<ul style="list-style-type: none"> • Provides characteristics and features of ONE source of finance OR • Identifies at least TWO sources of finance 	1–2

Question 2 (a)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Identifies the nature and purpose of the study in relation to the use of a technology in animal production AND <ul style="list-style-type: none">• Provides characteristics and features of the method used in the study	3
<ul style="list-style-type: none">• Identifies the nature and purpose of the study in relation to the use of a technology in animal production AND <ul style="list-style-type: none">• Sketches in general terms some of the aspects of this method used in the study	2
<ul style="list-style-type: none">• Identifies the nature and purpose of the study in relation to the use of a technology in animal production AND <ul style="list-style-type: none">• States the research method used	1

Question 2 (b)*Outcomes assessed: H5.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies TWO management practices available to farmers to increase the reproductive efficiency of a named animal AND <ul style="list-style-type: none">Relates both of these management practices to the ways in which they increase the reproductive efficiency of a named animal	4
<ul style="list-style-type: none">Identifies TWO management practices available to farmers to increase the reproductive efficiency of a named animal AND <ul style="list-style-type: none">Relates ONE of these management practices to the way in which it increases the reproductive efficiency of a named animal	3
<ul style="list-style-type: none">Provides the characteristics and features of TWO management practice available to farmers to increase the reproductive efficiency of a named animal OR <ul style="list-style-type: none">Provides characteristics and features of ONE AND <ul style="list-style-type: none">Relates the management practice to the way in which it increases the reproductive efficiency of a named animal	2
<ul style="list-style-type: none">Provides the characteristics and features of ONE management practice available to farmers to increase the reproductive efficiency of a named animal OR <ul style="list-style-type: none">Identifies TWO management practices available to farmers to increase the reproductive efficiency of a named animal	1

Question 2 (c)*Outcomes assessed: H3.4***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies TWO disease control methods, clearly identifying the issues associated with each method AND <ul style="list-style-type: none">provides points for and against each issue	7–8
<ul style="list-style-type: none">Identifies TWO disease control methods, clearly identifying the issues associated with each method AND <ul style="list-style-type: none">provides points for and against ONE issue	5–6
<ul style="list-style-type: none">Provides characteristics and features of TWO disease control methods clearly identifying the associated issues both of these may generate	3–4
<ul style="list-style-type: none">Provides characteristics and features of ONE disease control methods (one or two marks) without clearly identifying the issues each method may generate OR <ul style="list-style-type: none">Identifies at least TWO disease control methods	1–2

Question 3 (a)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the adoption of a new technology in a horticultural industry AND <ul style="list-style-type: none">Provides characteristics and features of the method used in the study	3
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the adoption of a new technology in a horticultural industry AND <ul style="list-style-type: none">Sketches in general terms some of the aspects of this method used in the study	2
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the adoption of a new technology in a horticultural industry AND <ul style="list-style-type: none">States the research method used	1

Question 3 (b)*Outcomes assessed: H5.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies TWO innovative plant propagation techniques used to increase production in horticulture AND <ul style="list-style-type: none">Relates both of these innovative techniques to their role in increasing production in horticulture	4
<ul style="list-style-type: none">Identifies TWO innovative plant propagation techniques used to increase production in horticulture AND <ul style="list-style-type: none">Relates ONE of these techniques to the way in which it increases production in horticulture	3
<ul style="list-style-type: none">Provides the characteristics and features of TWO innovative plant propagation techniques used to increase production in horticulture OR <ul style="list-style-type: none">Provides characteristics and features of ONE AND <ul style="list-style-type: none">Relates the innovative technique to the way in which it increases production in horticulture	2
<ul style="list-style-type: none">Provides the characteristics and features of ONE innovative plant propagation technique used to increase production in horticulture OR <ul style="list-style-type: none">Identifies TWO innovative plant propagation techniques used to increase production in horticulture	1

Question 3 (c)*Outcomes assessed: H3.4***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies TWO technological changes available to horticultural enterprises AND <ul style="list-style-type: none">provides points for and against each change listed	7–8
<ul style="list-style-type: none">Identifies TWO technological changes available to horticultural enterprises AND <ul style="list-style-type: none">provides points for and against ONE of these changes	5–6
<ul style="list-style-type: none">Provides characteristics and features of TWO technological changes available to horticultural enterprises	3–4
<ul style="list-style-type: none">Provides characteristics and features of ONE change OR <ul style="list-style-type: none">Identifies at least TWO technological changes available to horticultural enterprises	1–2

Question 4 (a)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the implementation of either an alternative agricultural production system or technology AND <ul style="list-style-type: none">Provides characteristics and features of the method used in the study	3
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the implementation of either an alternative agricultural production system or technology AND <ul style="list-style-type: none">Sketches in general terms some of the aspects of this method used in the study	2
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the implementation of either an alternative agricultural production system or technology AND <ul style="list-style-type: none">States the research method used	1

Question 4 (b)*Outcomes assessed: H5.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies TWO factors that could lead to the development of alternative production systems or technological innovations AND <ul style="list-style-type: none">Relates both of these factors to their role in the development of alternative production systems or technological innovations	4
<ul style="list-style-type: none">Identifies TWO factors that could lead to the development of alternative production systems or technological innovations AND <ul style="list-style-type: none">Relates ONE of these factors to its role in the development of alternative production systems or technological innovations	3
<ul style="list-style-type: none">Provides the characteristics and features of TWO factors that could lead to the development of alternative production systems or technological innovations OR <ul style="list-style-type: none">Provides characteristics and features of ONE method AND <ul style="list-style-type: none">Relates the factor to its role in the development of alternative production systems or technological innovations	2
<ul style="list-style-type: none">Provides the characteristics and features of ONE factor that can lead to the development of alternative production systems or technological innovations OR <ul style="list-style-type: none">Identifies TWO factors that can lead to the development of alternative production systems or technological innovations	1

Question 4 (c)*Outcomes assessed: H3.4***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies TWO alternative systems or technologies, clearly identifying the issues associated with each AND <ul style="list-style-type: none">provides points for and against each issue	7–8
<ul style="list-style-type: none">Identifies alternative systems or technologies, clearly identifying the issues associated with each AND <ul style="list-style-type: none">provides points for and against ONE issue	5–6
<ul style="list-style-type: none">Provides characteristics and features of alternative systems or technologies clearly identifying the associated issues both of these may generate	3–4
<ul style="list-style-type: none">Provides characteristics and features of ONE alternative system or technology (one or two marks) without clearly identifying the issues each may generate OR <ul style="list-style-type: none">Identifies at least TWO alternative systems or technologies (1 mark)	1–2

Question 5 (a)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the potential to improve production in a plant production system AND <ul style="list-style-type: none">Provides characteristics and features of the method used in the study	3
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the potential to improve production in a plant production system AND <ul style="list-style-type: none">Sketches in general terms some of the aspects of this method used in the study	2
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the potential to improve production in a plant production system AND <ul style="list-style-type: none">States the research method used	1

Question 5 (b)*Outcomes assessed: H5.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies of TWO innovative technologies that have improved the management of environmental factors in a plant production system AND <ul style="list-style-type: none">Relates both of these technologies to the ways in which they improve the management of the environmental factor in a plant production system	4
<ul style="list-style-type: none">Identifies TWO innovative technologies that have improved the management of environmental factors in a plant production system AND <ul style="list-style-type: none">Relates ONE of these technologies to the way in which it improves the management of the environmental factor in a plant production system	3
<ul style="list-style-type: none">Provides the characteristics and features of TWO innovative technologies that have improved the management an environmental factor in a plant production system OR <ul style="list-style-type: none">Provides characteristics and features of ONE AND <ul style="list-style-type: none">Relates the innovative technology to the way in which it improves the management of the environmental factor in a plant production system	2
<ul style="list-style-type: none">Provides the characteristics and features of ONE innovative technology that has improved the management of the environmental factor in a plant production system OR <ul style="list-style-type: none">Identifies TWO innovative technologies that have improved the management of environmental factors in a plant production system	1

Question 5 (c)*Outcomes assessed: H3.4***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Identifies at least TWO issues associated with Genetic engineering AND• Provides a range of points for and/or against each of the issues identified	7–8
<ul style="list-style-type: none">• Identifies at least TWO issues associated with Genetic Engineering AND• provides at least ONE point for and/or against the Genetic engineering issues identified	5–6
<ul style="list-style-type: none">• Provides characteristics and features of Genetic Engineering AND• Identifies at least TWO issues associated with Genetic Engineering	3–4
<ul style="list-style-type: none">• Provides characteristics and features of Genetic Engineering OR• Identifies at least TWO issues related to genetically engineered plant varieties (1 mark)	1–2

Question 6 (a)*Outcomes assessed: H4.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the more efficient use of water in an agricultural production system ANDProvides characteristics and features of the method used in the study	3
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the more efficient use of water in an agricultural production system ANDSketches in general terms some of the aspects of this method used in the study	2
<ul style="list-style-type: none">Identifies the nature and purpose of the study in relation to the more efficient use of water in an agricultural production system ANDStates the research method used	1

Question 6 (b)*Outcomes assessed: H5.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies TWO innovative technologies used in land management to increase sustainability in agriculture AND <ul style="list-style-type: none">Relates both of these technologies to the ways in which they improve sustainability in agriculture	4
<ul style="list-style-type: none">Identifies TWO innovative technologies used in land management to increase sustainability in agriculture AND <ul style="list-style-type: none">Relates ONE of these technologies to the way in which it improves sustainability in agriculture	3
<ul style="list-style-type: none">Provides the characteristics and features of TWO innovative technologies used in land management to increase sustainability in agriculture OR <ul style="list-style-type: none">Provides characteristics and features of ONE AND <ul style="list-style-type: none">Relates the technology to the way in which it improves sustainability in agriculture	2
<ul style="list-style-type: none">Provides the characteristics and features of ONE innovative technology used in land management to increase sustainability in agriculture OR <ul style="list-style-type: none">Identifies TWO innovative technologies used in land management to increase sustainability in agriculture	1

Question 6 (c)*Outcomes assessed: H3.4***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies at least TWO issues associated with Total Catchment Management ANDProvides a range of points for and/or against each of the issues identified	7–8
<ul style="list-style-type: none">Identifies at least TWO issues associated with Total Catchment Management ANDProvides at least ONE point for and/or against the Total Catchment Management issues identified	5–6
<ul style="list-style-type: none">Provides characteristics and features of Total Catchment Management ANDIdentifies at least TWO issues associated with Total Catchment Management	3–4
<ul style="list-style-type: none">Provides characteristics and features of Total Catchment Management ORIdentifies at least TWO issues related to Total Catchment Management (1 mark)	1–2