SECTION A – 9.4 Search for Better Health – Dot point: 7(a):

Perform an investigation to examine plant shoots and leaves and gather first- hand information of evidence of pathogens and insect pests

Students must source examples of pathogen/insect affected plant shoots and leaves. Students should then complete the table below to present their investigation (the table must fit on THIS page ONLY) (10 marks)

Aim:
Hypothesis:
Materials Used:
Method:
Results: NB: Include photos of your plant shoots and leaves examined.
Discussion/Conclusion:

SECTION B – 9.4 Search for Better Health – Dot point: 7.1:

Discuss the role of quarantine in preventing the spread of disease and plants and animals INTO AUSTRALIA

PART I: **Choose ONE plant disease AND ONE animal disease indicated in the table immediately below and complete the table (the table must fit on THIS page ONLY) (5 marks)**

DISEASE	Pathogen/Host Relationship and damaging affects
AFFECTING PLANTS: *Black sigatoka in bananas* **OR** *Citrus canker in citrus fruit*	
AFFECTING ANIMALS *Ebola* **OR** *Anthrax*	
QUARANTINE MEASURES	BENEFITS
	LIMITATIONS
	JUDGEMENT

SECTION B – 9.4 Search for Better Health – Dot point: 7.1:
Discuss the role of quarantine in preventing the spread of disease and plants and animals ACROSS REGIONS OF AUSTRALIA

PART II: **Choose ONE plant disease AND ONE animal disease indicated in the table immediately below and complete the table (the table must fit on THIS page ONLY) (5 marks)**

DISEASE	Pathogen/Host Relationship
AFFECTING PLANTS: *Queensland Fruit Fly* **OR** *Grape phylloxera*	
AFFECTING ANIMALS: *Pestivirus* **OR** *Hendra Virus*	
QUARANTINE MEASURES	BENEFITS
	LIMITATIONS
	JUDGEMENT

SECTION C – 9.4 Search for Better Health – Dot point: 7.2:

Explain how ONE of the following strategies has controlled and/or prevented disease:
- public health programs
- pesticides
- genetic engineering to produce disease-resistant plants and animals

PART I: Select ONE strategy above and use TWO examples to explain how disease is controlled and /or prevented (recommended HALF a page for this answer; DO NOT use more than this page) (5 marks)

Strategy selected:
Example 1:
Example 2:

Questions continue on next page

SECTION C – 9.4 Search for Better Health – Dot point: 7.2:

Gather and process information and use available evidence to discuss changing methods of dealing with plant and animals diseases, including the shift in emphasis from treatment and control to management or prevention of disease.

PART II: **Using an example, discuss how methods to deal with a disease have shifted from treatment and control to management or prevention of disease (MAXIMUM of 15 typed lines to be used) (5 marks)**

END OF TASK

MARKING GUIDELINES

SECTION A

MARKS 9-10
This student will effectively gather first-hand information and present their findings in a concise, accurate report to demonstrate the effect of pathogens and insect pests on plant shoots and leaves. This student will use appropriate terminology and reporting style to appropriately communicate information, assessing the validity of the task from gathered data and information to draw a meaningful conclusion. As part of the report this student is able to evaluate ways in which accuracy and reliability could be improved upon as part of the experimental design process for future investigations.

MARKS 7-8
This student will attempt to effectively gather first-hand information and present their findings in an accurate report to demonstrate the effect of pathogens and insect pests on plant shoots and leaves. This student will attempt to use appropriate terminology and a reporting style to appropriately communicate information, with some attempt to assess the validity of the task from gathered data and information to draw a meaningful conclusion. As part of the report this student attempts to evaluate ways in which accuracy and reliability could be improved upon as part of the experimental design process for future investigations.

MARKS 5-6
This student will attempt to gather first-hand information and present their findings in a report to demonstrate the effect of pathogens and insect pests on plant shoots and leaves. This student will attempt to use some appropriate terminology and a reporting style to communicate information, with some attempt to assess the validity of the task and draw a meaningful conclusion. As part of the report this student may not include ways in which accuracy and reliability could be improved upon as part of the experimental design process for future investigations.

MARKS 2-4
This student will attempt to gather first-hand information and present some findings in a report to attempt to demonstrate the effect of pathogens and insect pests on plant shoots and leaves. This student will attempt to use some terminology and a reporting style to communicate information, with limited attempt made to assess the validity of the task and draw a meaningful conclusion. As part of the report this student may/may not include ways in which accuracy and reliability could be improved upon as part of the experimental design process for future investigations.

MARKS 0-1
This student makes little attempt to gather first-hand information and present findings in a report to demonstrate the effect of pathogens and insect pests on plant shoots and leaves.

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SECTION B

MARKS 9-10
This student will demonstrate superior skills in processing and analysing the impact of natural and human processes on biodiversity and the impact of human activity on the interaction of organisms and their environment. Information will be effectively and accurately evaluated to demonstrate the effectiveness of quarantine in preventing the spread of an appropriately selected plant and animal disease both into and across regions of Australia. This information will be appropriately presented as a table as instructed.

MARKS 7-8
This student will demonstrate thorough skills in processing and analysing the impact of natural and human processes on biodiversity and the impact of human activity on the interaction of organisms and their environment. An attempt will be made to effectively and accurately evaluate the effectiveness of quarantine in preventing the spread of an appropriately selected plant and animal disease both into and across regions of Australia. This information will be appropriately presented as a table as instructed.

MARKS 5-6

This student will demonstrate some skills in processing and analysing the impact of natural and human processes on biodiversity and the impact of human activity on the interaction of organisms and their environment. An attempt will be made to evaluate the effectiveness of quarantine in preventing the spread of an appropriately selected plant and animal disease both into and across regions of Australia. This information will be appropriately presented as a table as instructed.

MARKS 2-4
This student will demonstrate minimal skills in processing and analysing the impact of natural and human processes on biodiversity and the impact of human activity on the interaction of organisms and their environment. An attempt will be made to evaluate the effectiveness of quarantine in preventing the spread of an appropriately selected plant and animal disease both into and across regions of Australia. This information will be appropriately presented as a table as instructed.

MARKS 0-1
This student fails to demonstrate skills in processing and analysing the impact of natural and human processes on biodiversity and the impact of human activity on the interaction of organisms and their environment. The effectiveness of quarantine in preventing the spread of an appropriately selected plant and animals diseases is not successfully included in their response.

SECTION C

MARKS 9-10
This student demonstrates superior skills in gathering and processing information to show how advances in scientific understanding have resulted in more effective applications of biology on society and environment; discussing changing strategies and methods and the shift from treatment and control to management and prevention of disease. Information presented will be concise, coherent with effective use of appropriate examples as instructed to demonstrate excellent understanding of this concept and associated strategies.

MARKS 7-8
This student will attempt to demonstrate thorough skills in gathering and processing information to show how advances in scientific understanding have resulted in more effective applications of biology on society and environment; discussing changing strategies and methods and the shift from treatment and control to management and prevention of disease. Information presented will attempt to be concise, coherent with most examples used effectively to demonstrate thorough understanding of this concept and associated strategies.

MARKS 5-6
This student will attempt to demonstrate some skills in gathering and processing information to attempt to show how advances in scientific understanding have resulted in more effective applications of biology on society and environment; discussing changing strategies and methods and the shift from treatment and control to management and prevention of disease. Information presented will include the use of examples as instructed to effectively demonstrate sound understanding of this concept and associated strategies.

MARKS 2-4
This student will attempt to demonstrate some skills in gathering and processing information to show how advances in scientific understanding have resulted in more effective applications of biology on society and environment. Some attempt will be made to demonstrate the changing strategies and methods and the shift from treatment and control to management and prevention of disease. Some examples have been included as instructed demonstrating a limited understanding of this concept and associated strategies.

MARKS 0-1
This student fails to demonstrate skills in gathering and processing information to show how advances in scientific understanding have resulted in more effective applications of biology on society and environment. Some attempt will be made to demonstrate the changing strategies and methods and the shift from treatment and control to management and prevention of disease but examples fail to demonstrate an understanding of this concept and associated strategies.