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NZQA
NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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SUPERVISOR'S USE ONLY

Level 1 Agricultural and Horticultural Science, 2013

90924 Demonstrate knowledge of horticultural plant management practices and related plant physiology

9.30 am Tuesday 19 November 2013
Credits: Five

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate knowledge of horticultural plant management practices and related plant physiology.	Demonstrate in-depth knowledge of horticultural plant management practices and related plant physiology.	Demonstrate comprehensive knowledge of horticultural plant management practices and related plant physiology.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–8 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

TOTAL

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You are advised to spend 60 minutes answering the questions in this booklet.

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QUESTION ONE: PEST AND DISEASE CONTROL

Aphids

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Mildew

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Pests and diseases harm the production of horticultural plants. Growers can use several methods to control them, including integrated pest management (IPM) and chemical control.

Describe integrated pest management.

Describe THREE actions that are taken when carrying out integrated pest management. Explain why each of the actions should be carried out in the way you have described.

Description of the action	Explanation of the action
Action (1)	
Action (2)	
Action (3)	

Two management practices that can be used to control pests are integrated pest management and the application of chemicals.

Select and justify the better of these two methods for controlling pests by comparing and contrasting it with the other management practice.

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Selected management practice: _____

In your answer, you could consider:

- the effectiveness of controlling pests
- the environmental impact
- skill and knowledge required.

QUESTION TWO: NUTRIENT APPLICATION

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A grower applies fertiliser containing plant nutrients to the soil, to improve plant growth.

Describe the pathway that nutrients take from the soil, through the plant. You should refer to plant structures in your answer.

Describe THREE things a grower should do or decide on before applying fertiliser to the soil. Explain why each action or decision is important.

Description	Explanation
1	
2	
3	

Fertiliser can be applied in a solid form or through an irrigation system.

Select and justify the better of these two management practices by comparing and contrasting it with the other management practice.

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Selected management practice: _____

In your answer, you could consider:

- the ease of application to the crop
- the effect on plant growth
- the time between applications of nutrients.

QUESTION THREE: GROWING TOMATOES IN A GLASSHOUSE

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Glasshouse tomato growers carry out several management practices to maximise production.

Describe THREE management practices in which growers change the environmental conditions in the glasshouse, and explain how each of the environmental changes increases production. You should include plant processes in your explanation.

In your answer, you could consider three of the following management practices:

- increasing carbon dioxide
- increasing light
- increasing or decreasing temperature
- decreasing humidity.

Description	Explanation
Management practice (1)	
Management practice (2)	
Management practice (3)	

Tomato plants can be trained up strings, or left to grow unaided over the ground.

By comparing and contrasting these two methods, justify why training up strings is the better management practice for tomato production.

In your answer, you could consider:

- efficiency
- pest and disease control
- labour involved.

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Extra space if required.
Write the question number(s) if applicable.

QUESTION NUMBER

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