

90924



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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SUPERVISOR'S USE ONLY

Level 1 Agricultural and Horticultural Science, 2011

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

9.30 am Thursday 17 November 2011

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 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 2–11 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

ASSESSOR'S USE ONLY

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

QUESTION ONE: PEST, WEED AND DISEASE CONTROL IN PUBLIC GARDENS

Aphids are sucking insect pests that attack roses and reduce plant growth.

Aphids on rose bush



Source: <http://4.bp.blogspot.com/>

- (a) Aphids can be controlled by chemical sprays.
 - (i) Describe a step that should be used when applying chemical sprays in parks and public gardens for each of the following stages.

Before spraying: _____

During spraying: _____

After spraying: _____

- (ii) Explain how sucking insect pests affect photosynthesis.

Include in your answer:

- the plant parts that carry out photosynthesis
- what is required for photosynthesis to occur
- the products of photosynthesis.

Black spot, as shown in the photograph below, is a fungal disease that can affect roses in parks and gardens.

For copyright reasons, this resource cannot be reproduced here.

Source: <http://blogs.cce.cornell.edu/>

- (b) (i) Describe the **type of weather** and **seasons** that allow fungal diseases such as black spot to become a problem.

- (ii) Explain a non-chemical method that gardeners can use to prevent the spread of fungal diseases.

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QUESTION TWO: PRUNING

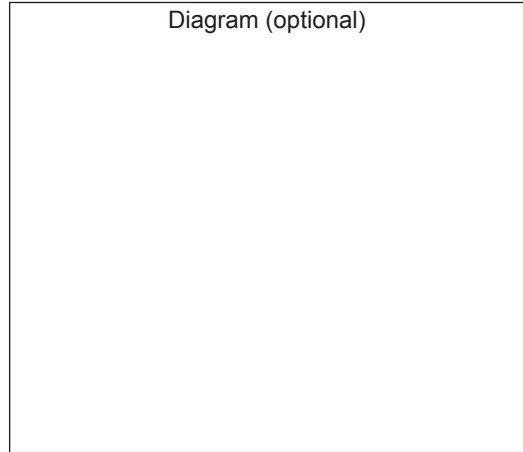
- (a) Describe THREE steps used to prune small stems of roses. Explain why each step should be carried out in that way. You may draw labelled diagrams to help explain your answer.

Step One

Description: _____

Explanation: _____

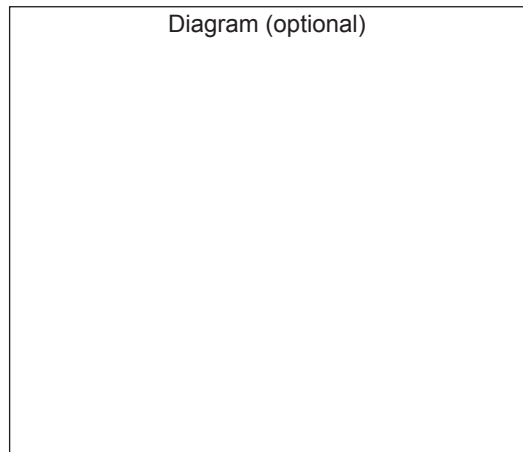
Diagram (optional)

**Step Two**

Description: _____

Explanation: _____

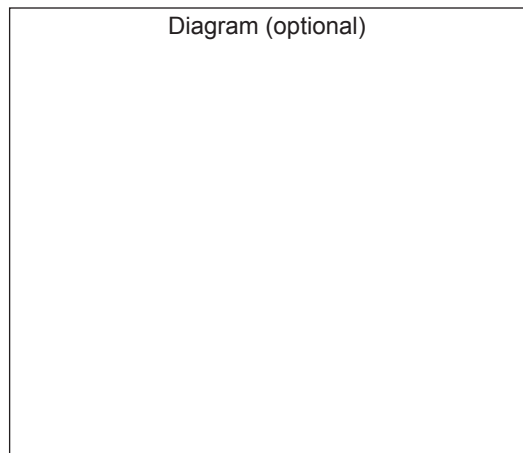
Diagram (optional)

**Step Three**

Description: _____

Explanation: _____

Diagram (optional)



QUESTION THREE: IRRIGATION

Irrigation is required over the summer months to replace water lost through evaporation and transpiration.

- (a) (i) Explain how the following are involved in transpiration:
- the external plant structures used by plants to absorb (take up) water
 - internal structures which move water through and then out of the plant.

- (ii) Explain how irrigation improves plant growth in a park. Include in your answer THREE important functions that water allows to be carried out by plants.

Function One: _____

Function Two: _____

Function Three: _____

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