

90924



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Level 1 Agricultural and Horticultural Science 2021

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

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 2–12 in the correct order and that none of these pages is blank.

Do not write in any cross-hatched area (///). This area may be cut off when the booklet is marked.

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

QUESTION ONE: Strawberries

Small-scale growers will often cultivate the soil before planting seeds.

- (a) Identify three actions a grower would carry out when cultivating a small-scale strawberry plot, and explain why they would take each action. Write your answers in the table below.

	Action	Why this action is carried out
1		
2		
3		

- (b) Explain why growers would use a misting house to grow seedlings.

Growers may use organic mulch, e.g. pea straw, to improve the growth of strawberry plants.



Organic mulch

(c) Justify a grower's decision to use organic mulch.

In your answer consider:

- properties of organic mulch
- the impact on soil temperature
- plant growing processes.

Please turn over ►



QUESTION TWO: Capsicums

Capsicum plants are regularly grown indoors from seed.

- (a) Describe three conditions that seeds need for germination, and explain why each condition is needed. Write your answers in the table below.

	Condition	Why this condition is needed
1		
2		
3		

- (b) Explain why it is important that growers control humidity when growing capsicums indoors.

Growers have the option of growing capsicums indoors using growing lights or natural light.



Growing lights

Natural light

(c) Justify the best method of lighting by comparing and contrasting each option.

In your answer consider:

- plant growing processes
- overall crop yield.

QUESTION THREE: Roses

Disbudding roses is commonly done at the start of the growing season, when buds are in the early stage of development.

- (a) Describe how disbudding is carried out on roses, and explain why it is done.

Aphids are a common pest on roses.



Aphid infestation

- (b) Explain how pests, such as aphids, impact the growth of roses.

Nutrients are needed to ensure healthy plant growth. Rose growers have the option of using fertiliser in either liquid or granular form.



Liquid fertiliser

Granular fertiliser

(c) Recommend the better form of fertiliser, and justify your choice by comparing it with the other.

In your answer consider:

- plant structures and growth
- nutrient availability and plant uptake.

Please turn over ▶

Acknowledgements

Material from the following sources has been adapted for use in this examination:

Page 3

Straw mulch (photo) <https://landscape-solutions.net>

Page 6

Growing lights (photo) <https://www.growveg.com.au>

Natural light (photo) <https://teara.govt.nz>

Page 8

Aphids on rosebud (photo) <https://www.palmers.co.nz/whats-wrong-rose/>

Aphids on rose plant (photo) <https://www.stuff.co.nz/life-style/home-property>

Page 9

Liquid fertiliser (photo) <https://www.bunnings.co.nz>

Granular fertiliser (photo) <https://tuigarden.co.nz>