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Tick this box if there is no writing in this booklet

SUPERVISOR'S USE ONLY

# Level 1 Agricultural and Horticultural Science 2020

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

9.30 a.m. Wednesday 18 November 2020 Credits: Five

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

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

TOTAL

## **QUESTION ONE: Orchards**

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Fruit trees require shelter, and orchards are often surrounded by shelter belts.

escribe	a shelter belt that could be used around an orchard.
xplain w	why a shelter belt is needed, and how it affects plant growth and fruit yield.

	rder to minimise plant pests such as leaf roller, orchardists set pheromone traps and use cticides.	ASSESSOR'S USE ONLY
	Adult moth and larvae caterpillar of the brownheaded leaf roller (Ctenopseustis obliquana)	
c)	Justify why an orchardist would use these two management practices to reduce plant pests in their orchard.	
	In your answer consider:	
	<ul><li>how each management practice works</li><li>the benefits of using both management practices</li></ul>	
	the effect on plant growth and yield.	

Please turn over ➤

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# **QUESTION TWO: Seedlings**

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(a) Describe THREE actions carried out to sow seeds into containers, and explain why each action is carried out in the way you have described.

	Description of action	Explanation of why the action is carried out
Action 1		
Action 2		
Action 3		

Seedlings are often placed in cold frames or cloches to harden off before being planted into a vegetable garden.



Cold frames or cloches

(b)	Explain why seedlings need to be hardened off, and how this improves plant production.

Dripl	ine or overhead sprinklers can be used to water seedlings.	ASSESSOR'S USE ONLY
	Dripline and overhead sprinklers	
(c)	Select either dripline or overhead sprinklers as the most effective system for irrigating seedlings.	
	Justify your selection by comparing and contrasting your chosen option with the other one.	
	In your answer consider:  how each system works  the effect water has on plant growth.	

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## **QUESTION THREE: Tomatoes**

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	e difference between macronutrients and micronutrients, and explain how they processes.
crease prod	uction of tomatoes grown in a glasshouse, carbon dioxide (CO <sub>2</sub> ) can be pumped
the glasshou	se.
ne giassnoi	se.
ne giassnoi	se.
ne giassnoi	Se.  Carbon dioxide pump in a glasshouse
Explain the	Se.
Explain the	Se.  Carbon dioxide pump in a glasshouse  effect carbon dioxide has on plant production and crop yield. You will need to
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		ASSESSOR USE ONLY
omato p	ants need to be staked and disbudded, even when grown inside.	
c) Jus	ify how staking and disbudding tomato plants improves production.	
In y	our answer consider:	
•	how each practice is carried out	
•	the effect each practice has on plant growth and crop yield how the two practices work together to improve production.	
•	now the two practices work together to improve production.	

Please turn over ➤

USE ONLY

		Extra space if required. Write the question number(s) if applicable.	AS
QUESTION NUMBER		write the question number(s) it applicable.	

#### Acknowledgements

Images from the following sources have been adapted for use in this examination:

#### Page 3

https://www.inaturalist.org/taxa/388183-Ctenopseustis-obliquana https://www.kiwicare.co.nz/problem/leaf-roller/

#### Page 5

https://adloheat.com.au/products/combination-shade-house-hot-houses http://plastmebel.ru/teplitsa-v-korobke-cover-it-3kh6kh24m-so-svetorasseivayuschim-tentom-kruglaya-krysha-zhyostkaya-dver

#### Page 6

https://5.imimg.com/data5/SD/NT/MY-28421283/drip-irrigation-500x500.jpg https://sproutwellgreenhouses.com.au/wp-content/uploads/2019/02/Sproutwell-Mist.jpg

#### Page 8

https://innovaengineers.com/2018/02/09/plant-based-ventilation-systems/