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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 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.

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

TOTAL

ASSESSOR'S USE ONLY

QUESTION ONE: OrchardsASSESSOR'S
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Fruit trees require shelter, and orchards are often surrounded by shelter belts.

- (a) Describe a shelter belt that could be used around an orchard.

- (b) Explain why a shelter belt is needed, and how it affects plant growth and fruit yield.

QUESTION TWO: Seedlings

- (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.

QUESTION THREE: Tomatoes

Tomato plants need both macronutrients and micronutrients.

- (a) Describe the difference between macronutrients and micronutrients, and explain how they affect plant processes.

To increase production of tomatoes grown in a glasshouse, carbon dioxide (CO₂) can be pumped into the glasshouse.



Carbon dioxide pump in a glasshouse

- (b) Explain the effect carbon dioxide has on plant production and crop yield. You will need to include the relevant plant processes and plant structures in your answer.

Acknowledgements

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

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

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<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>

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<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>

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