

SUPERVISOR'S USE ONLY

91290



Level 2 Agricultural and Horticultural Science, 2018
91290 Demonstrate understanding of techniques used to
modify physical factors of the environment
for NZ plant production

9.30 a.m. Wednesday 28 November 2018 Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of	Demonstrate in-depth understanding	Demonstrate comprehensive
techniques used to modify physical	of techniques used to modify physical	understanding of techniques used
factors of the environment for	factors of the environment for	to modify physical factors of the
commercial plant production in New	commercial plant production in New	environment for commercial plant
Zealand.	Zealand.	production in New Zealand.

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.

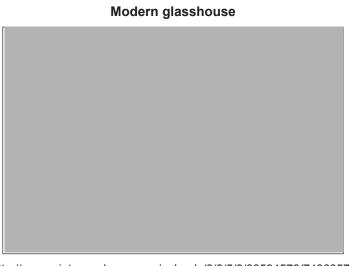
YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

TOTAL

## **QUESTION ONE: GLASSHOUSES**

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Glasshouses are used to control the physical environment for plant production.



Source: http://www.wintergardenz.co.nz/uploads/3/0/5/9/30594579/7436057\_orig.jpg.

	the level of carl	DOIT GIOXIGE C	an be controll	eu iii giassiiou	363.	
Explain the e	ffect of carbon d	ioxide enrich	ment on crop	yield.		

Whitewash

Two methods used to control light levels in glasshouses are diffused glass and temporary sprayed glass coatings, such as whitewash, as shown in the photographs below.

Regular (left) and diffused glass

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		http://www.agf.nl/nieuws/2015/0203	https://www.redusystems.com/
		/smartglass.jpg.	public/upload/application_ techniques/image/Helikopter.jpg.
(c)	(i)	Explain why light levels need to be cont	rolled in a glasshouse.

ng glasshouses.	

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The examination continues on the following page.

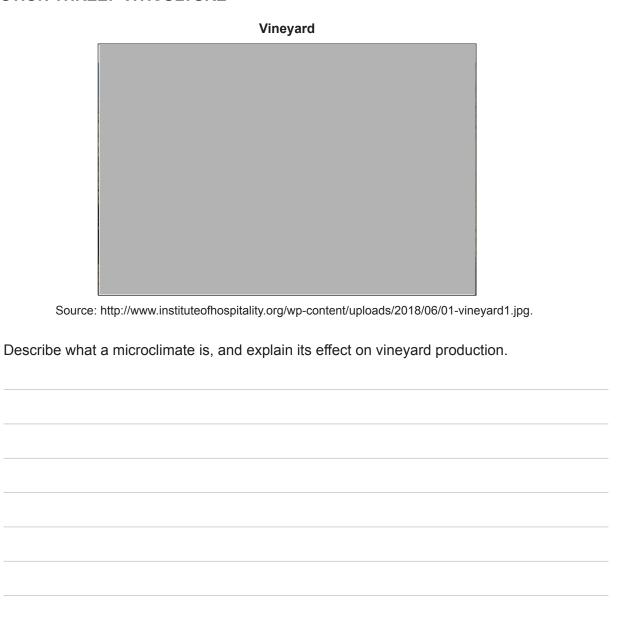
#### **QUESTION TWO: CITRUS**

QUE	31	ION TWO: CITRUS
		Citrus orchard
		Source: http://www.uncleggong.com/data/file/bod_33/236990270_mKLpJoSw_Farmer27s_005.jpg
(a)	De fru	scribe how the use of reflective mulches in commercial orchards increases the quality of t.
		e generally not tolerant of 'wet feet'. An orchardist has the choice of using either mounding rface drains to control soil water levels.
(b)	(i)	Describe the effect of drainage on plant growth, and explain how this will impact on crop yield, quality, and timing.

CC	stify the use of either mounding or subsurface drainage in a citrus orchard by imparing and contrasting the two methods in terms of economic and environmental spacts.	

## **QUESTION THREE: VITICULTURE**

(a)



A vineyard owner can use either helicopters or frost sprinklers to prevent frost from damaging the ASSESSOR'S USE ONLY grapes. Justify the use of ONE of these methods to manage frost in vineyards by comparing and (b) contrasting it with the other method. Selected method: In your answer: explain how both helicopters and frost sprinklers modify the environment analyse the practices in terms of economic, social, and environmental impacts.

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QUESTION NUMBER							

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QUESTION NUMBER	write the question number(s) it applicable.	

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