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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

90919 Demonstrate knowledge of soil management practices

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

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate knowledge of soil management practices.	Demonstrate in-depth knowledge of soil management practices.	Demonstrate comprehensive knowledge of soil management practices.

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

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QUESTION ONE: Growing carrots

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Carrots are grown from seed. Before planting the seed, the soil is cultivated.

(a)	Describe THREE actions carried out when cultivating paddocks, and explain why each action
	should be carried out.

	Description of action	Explanation of why the action is carried out
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Carrots are grown in a silt loam soil.

(b)

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A grower has noticed that their carrot yield has been decreasing each year and so has decided to practice crop rotation.

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(c) Justify the use of crop rotation by comparing and contrasting it to monocropping.

In your answer:

- describe how crop rotation is carried out
- explain how crop rotation affects chemical and biological properties of the soil, and plant growth.

Please turn over ➤

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QUE	STIO		SSESSOR'S USE ONLY
Havir	ng sto	ock in paddocks during winter can lead to pugging of the soil.	
(a)	Expla	lain how pugging affects soil properties.	
(b)	(i)	Describe a suitable drainage system that could be put into soil to reduce pugging.	

Part (b) continues on page 6 ➤

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	(ii)	Explain how adding drainage would improve soil properties.				
Ferti	liser i	s regularly applied to paddocks on heaf finishing farms. Often a soil test is done before				
		s regularly applied to paddocks on beef-finishing farms. Often a soil test is done before ertiliser.				
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QUESTION THREE: Sandy soils

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The particle size, or texture, of a soil affects the soil's physical, chemical, and biological properties.

(a)	Describe the texture of sandy soils.

A grower has decided to make compost.

(b) Describe THREE actions carried out when making compost, and explain why each action should be carried out.

	Description of action	Explanation of why the action is carried out
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, .	the physical, chemical, and biological properties of soil	
•	the effect on plant growth.	

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QUESTION NUMBER			_	

Acknowledgements

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

Page 2

https://bidfreshhamilton.co.nz/any-time/southern-fresh/

Page 5

https://thisnzlife.co.nz/what-is-pugging-how-to-avoid-damaging-your-soil-this-winter/