

90924



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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Level 1 Agricultural and Horticultural Science, 2014

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

9.30 am Tuesday 11 November 2014
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 2–8 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.

Not Achieved

TOTAL

4

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QUESTION ONE: COUNCIL PARKS AND RESERVES

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Council flower bed



Describe TWO methods of cultivation that would be used in council flower beds.

Weed pruning, not letting the flowers over grow. //

Describe THREE actions that are taken when preparing a flower bed for transplanting plants. Explain why each of the actions should be carried out in the way you have described.

| Description of the action | Reason for the action |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Action (1) When removing plants make sure you prune some of the roots before transplanting // | So that the roots can regrow in its new place / Soil. // |
| Action (2) dont put to close together // | they will be competing for the nutrient set of like a weed. // |
| Action (3) | |

Weeds can be controlled by chemicals or by using a push hoe.

Select and justify the better management practice for controlling weeds by comparing and contrasting it with the other management practice.

Selected management practice: chemicals //

In your answer, you could consider:

- damage to non-targeted plants
- effectiveness of control
- members of the public.

chemicals would be the best option as it would get rid of more weeds and using the push hoe would not be able to get rid of all the weeds surrounding the area.

but push hoes are alright if not wanting to harm other plants or not have as much danger to the public. //

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QUESTION TWO: ROSE GARDENS

Rose gardens are usually planted in beds or groups of plants to look good when they flower.

Rose garden



Rose flower-heads before dead-heading



Before applying pesticides with a knapsack sprayer, reading the product label is an essential step. Describe THREE reasons why instructions on the product label should be read.

So you dont use the wrong pesticide, might put
the wrong knapsack sprayer on it.
might kill the roses //

Describe THREE actions a grower would take to reduce fungal disease on roses. Explain the reason for each decision.

| Description of the action | Reason for the action |
|-----------------------------------|---------------------------------|
| Action (1) Use right sprays // | So it prevents fungal spread // |
| Action (2) | |
| Action (3) | |

The rose flower-head can be removed once the petals have fallen. This is called "dead-heading". Justify the management practice of removing dead-heads, compared with leaving the dead flower-heads on the plant.

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In your answer, you could consider:

- plant health
- plant energy.

if you were to leave the dead head on the plant you are putting the plant at risk and not giving it a chance to grow to its potential.

Where as if you were to remove the dead head it would create energy within the plant and grow to its potential. //

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QUESTION THREE: KIWIFRUIT ORCHARDS

Kiwifruit training structures



Shelterbelt for kiwifruit



Explain the reasons why kiwifruit are grown on training structures.

dont need the greatest of soil to grow good.

Describe THREE actions a grower should carry out when pruning kiwifruit. Explain the reason for each action.

| Description of the action | Reason for the action |
|---------------------------|-----------------------|
| Action (1) | |
| Action (2) | |
| Action (3) | |

Kiwifruit orchards frequently have shelter around blocks of kiwifruit plants. Justify this as the better management practice for kiwifruit production, by comparing and contrasting it with having no shelter.

In your answer, you could consider:

- the way in which the environment is altered by a shelterbelt
- the effect on fruit quality.

With the shelter around the kiwifruit it prevents the wind from blowing the tree around and blowing the kiwifruit out of the trees. it helps the kiwifruit to grow to its biggest potential. //

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| Not Achieved exemplar for Horticulture 90924 2014 | | Total score | 04 |
|---------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Q | Grade score | Annotation | |
| 1 | N1 | The student showed confusion as to what the term 'cultivation' is in part 1 and what was meant by preparation of a flower bed. The statement that push hoes do not 'have as much danger to the public' as compared to chemicals is correct; however, they would need to justify their statement – justification as to why 'chemicals get rid of more weeds' than a push hoe. | |
| 2 | N2 | For the student to have moved from a N2 to an A3, they would needed to have expanded on their point that a 'plant is at risk' when a dead head is left on the plant and discussed in more detail as to why more energy would be created if it was removed. | |
| 3 | N1 | In the justification section of this question, the student is correct to state that by reducing wind the kiwifruit can grow to its 'potential' but there is no justification as to why this is the case. | |