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NZQA

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Tick this box if you
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Level 1 Biology 2021

90928 Demonstrate understanding of biological ideas relating to the life cycle of flowering plants

Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of biological ideas relating to the life cycle of flowering plants.	Demonstrate in-depth understanding of biological ideas relating to the life cycle of flowering plants.	Demonstrate comprehensive understanding of biological ideas relating to the life cycle of flowering plants.

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.

Do not write in any cross-hatched area (▨). This area may be cut off when the booklet is marked.

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

QUESTION ONE: POLLINATION AND FERTILISATION

Tūī and harakeke (flax) flowers.

Source: https://en.wikipedia.org/wiki/
Tui_(bird)#/media/File:Prosthemadera_
novaeseelandiae_-Waikawa,_Marlborough,_
New_Zealand-8_(2).jpg

Moth on a white flower. The flowers
bloom during the night and the leaves
have a very distinctive musty smell.

Source: https://davesgarden.com/guides/
articles/view/2510

Bee and a pōhutukawa flower. The flower
has very small petals, but big, bright-red
clusters of stamens.

Source: https://www.waihekehoney.co.nz/
shop/all-honey/organic-pohutukawa-honey/

Karamū (coprosma). The flowers have
small white or pale-coloured petals.

Source: https://www.southernalpsphotography.
com/Plants/New-Zealand-Flora/Shrubs/
Glossy-karamu/i-VzCt4p5

Two important processes that occur in the reproduction of flowering plants are pollination and fertilisation. Different flowers are pollinated in different ways.

Discuss how both pollination and fertilisation are important in the life cycle of flowering plants.

In your answer:

• describe the processes of pollination and fertilisation

• describe TWO ways pollination can be carried out

• explain how the structure of a flower is linked to the way it is pollinated

• discuss why pollination and fertilisation are important in the life cycle of flowering plants.

QUESTION TWO: SEED DISPERSAL

The photographs below show different ways seeds can be dispersed.

Source: www.moasark.co.nz/2015/02/03/
lizards-berries-seed-dispersal/

Source: www.sciencelearn.org.nz/
resources/2719-kereru-our-native-pigeon

Source: https://commons.wikimedia.org/
wiki/File:Spinifex_sericeus_seed_head.jpg

Source: https://ordinarygood.wordpress.
com/tag/maori-legend/

Source: www.pinterest.nz/
pin/137993176055666419/

Source: www.sciencelearn.org.nz/
images/92-dandelion-seeds

Seed dispersal is an important process in the life cycle of flowering plants.

Discuss how seed dispersal occurs and why it is important in the life cycle of a flowering plant.

In your answer:

• describe TWO ways that seeds can be dispersed

• explain why seeds need to be dispersed

• discuss how the structures of TWO different seeds enable the environment to disperse them successfully.

QUESTION THREE: PHOTOSYNTHESIS

Source: www.dreamstime.com/photosynthesis-leaf-vector-illustration-labeled-educational-scheme-
where-light-energy-converts-to-chemical-sugars-natural-botanic-image176110100

The structure of a leaf enables photosynthesis to occur efficiently.

Using the diagram, discuss how different parts of a leaf, and the way they are arranged, enable
photosynthesis to occur efficiently.

In your answer:

- describe the chemical process of photosynthesis

- explain why stomata are located mainly on the underside of the leaf

- discuss how THREE parts of the leaf work together to enable photosynthesis to occur efficiently.

QUESTION NUMBER	**Extra space if required.** **Write the question number(s) if applicable.**