

91156



NEW ZEALAND QUALIFICATIONS AUTHORITY  
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QUALIFY FOR THE FUTURE WORLD  
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SUPERVISOR'S USE ONLY

## Level 2 Biology, 2018

### 91156 Demonstrate understanding of life processes at the cellular level

9.30 a.m. Friday 23 November 2018  
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of life processes at the cellular level.	Demonstrate in-depth understanding of life processes at the cellular level.	Demonstrate comprehensive understanding of life processes at the cellular level.

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 space for any answer, use the page(s) provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–12 in the correct order and that none of these pages is blank.

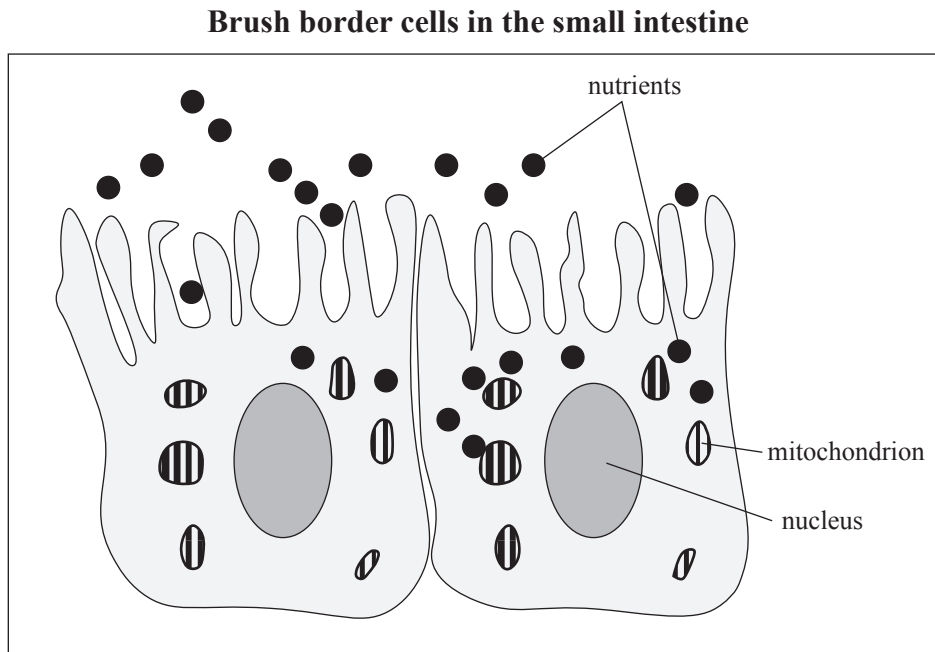
**YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.**

TOTAL

ASSESSOR'S USE ONLY

**QUESTION ONE: MOVEMENT OF MATERIALS**

In the small intestine, it is the function of the brush border cells to absorb nutrients. When nutrients first enter the intestines, the nutrients can move into the brush border cells by diffusion. The brush border cells can also absorb these nutrients using active transport.



(a) Describe the process of diffusion.

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(b) Explain the process of active transport.

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**QUESTION THREE: DNA REPLICATION AND MITOSIS**ASSESSOR'S  
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Mitosis and DNA replication occur at different rates, depending on the time of year, the plant part, and the stage of the plant's life cycle.

**Diagram showing seed germination**

Source: [www.dreamstime.com/stock-illustration-bean-seed-germination-isolated-white-image56489327](http://www.dreamstime.com/stock-illustration-bean-seed-germination-isolated-white-image56489327)

- (a) Describe **when** DNA replication happens, and explain **why** DNA replication is necessary.

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