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NZQA

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MANA TOHU MĀTAURANGA O AOTEAROA

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SUPERVISOR'S USE ONLY

Level 2 Biology, 2011

90464 Describe cell structure and function

2.00 pm Friday 18 November 2011
Credits: Three

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 2–10 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.

ASSESSOR'S USE ONLY	Achievement Criteria	
Achievement	**Achievement with Merit**	**Achievement with Excellence**
Describe cell structure and function. ☐	Explain cell structure and function. ☐	Discuss cell structure and function. ☐
Overall level of performance ☐		

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You are advised to spend 35 minutes answering the questions in this booklet.

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QUESTION ONE

Compare and contrast the two organelles shown below.

Mitochondrion (plural = mitochondria)

www.chelationtherapyonline.com/anatomy/images/mitochondria.jpg

Chloroplast

http://agushome.blogspot.com/2011/02/mengenal-kloroplas.html

In your answer you should:

- describe the processes carried out by the two organelles
- explain how the structures of the organelles allow them to carry out their functions
- discuss reasons for similarities and differences in the structure, location, and number of these organelles.

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QUESTION TWO

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(a) Enzymes play an important role in most of the cellular functions that are carried out by organelles.

Molecules can be broken down into smaller parts as well as the opposite process where molecules are joined together. These processes take place in organelles such as lysosomes and the Golgi body.

Describe the function of these two organelles:

Lysosome: _____

Golgi body: _____

(b) The term 'specific' can be used to describe the physical / chemical conditions in which an enzyme works, and the type of substrate on which it works.

Explain this statement, with reference to one or more named examples.

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(c) Enzyme activity is rarely at a constant rate. The amount of enzyme available, the amount of substrate on which the enzymes can act, as well as the presence or absence of enzyme poisons or co-enzymes, are all factors that can change the rate of activity within a cell.

Discuss the effect of any THREE of these factors on the rate of activity within animal or plant cells.

There is more space for your answer to Question Two (c) on the following page.

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QUESTION THREE

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DNA replication occurs at different rates during the lifetime of a plant or animal.

Evaluate this statement, including in your answer:

- a description of what DNA replication is
- an explanation of how the process occurs
- a discussion of why the rate of DNA replication varies during the lifetime of a plant or animal.

A labelled diagram may be used to support your answer.

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

QUESTION NUMBER

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