2

90464

NZQA
NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

For Supervisor's use only

Level 2 Biology, 2009

90464 Describe cell structure and function

Credits: Three
2.00 pm Wednesday 18 November 2009

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 answer 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 2–6 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.

For 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					

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

Assessor's use only

QUESTION ONE

Mitochondria carry out an essential cell process. The number of mitochondria can be different, depending on the location and function of the cell in an organism.

Relate the high number of mitochondria in some cells to their function.

In your answer you should consider:

- the structure of mitochondria (you may use a labelled diagram to support your answer)
- the process carried out by mitochondria
- the types of cells that would have the most mitochondria
- the reasons for higher numbers in some cells.

QUESTION TWO

Assessor's use only

Changes in temperature can alter the rate of activity of enzymes, which in turn affects the metabolic rate of an organism.

Discuss the reasons why enzyme activity is affected by temperature.

In your answer you should include:

- the structure of enzymes (you may use a labelled diagram to support your answer)
- the purpose of enzymes
- how enzymes work
- reasons for the different effects of temperature on enzymes.

QUESTION THREE

Assessor's use only

Organisms use a variety of cellular processes for the movement of materials, including osmosis and active transport.

(a) **Describe** the processes of osmosis and active transport.

Osmosis: _____

Active transport: _____

(b) **Explain** why the two different processes are necessary, including an example of where each may occur in an organism.

(c) **Compare and contrast** the movement of water in and out of the cells of unicellular organisms living in freshwater and those living in saltwater environments, **and** discuss how unicellular organisms that live in **freshwater** environments regulate this movement of water.

Assessor's use only

Extra paper for continuation of answers if required.
Clearly number the question.

Assessor's use only

Question number