



For Supervisor's use only

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90464



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA



National Certificate of Educational Achievement  
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

## Level 2 Biology, 2005

### 90464 Describe cell structure and function

Credits: Three

2.00 pm Tuesday 15 November 2005

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 2–9 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.	<input type="checkbox"/>	Explain cell structure and function.	<input type="checkbox"/>	Discuss cell structure and function.	<input type="checkbox"/>
Overall Level of Performance				<input type="checkbox"/>	

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

### QUESTION ONE: CELL SPECIALISATION

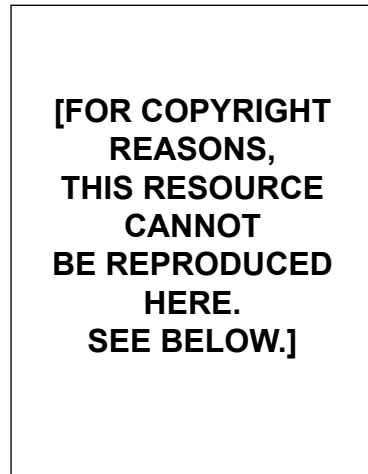
Cells can be specialised to carry out a specific role.

Below are diagrams of two cells specialised for absorbing materials. The diagrams are not to scale.

**Plant cell:**  
Root hair cell



**Animal cell:**  
Small intestine cell



Chris Lea, Pauline Lowrie, Siobhan McGuigan, *Biology AS*, Heinemann, Oxford, 2000, p 210

Chris Lea, Pauline Lowrie, Siobhan McGuigan, *Biology AS*, Heinemann, Oxford, 2000, p 44

- (a) Describe ONE **similarity** (other than size) in the structure of these two cells for absorbing materials.

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- (b) Explain how this similarity affects how these cells absorb materials.

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- (c) Osmosis and active transport are both processes used by cells. Compare and contrast these two processes.

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**QUESTION TWO: ENZYMES**Assessor's  
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Cell respiration is controlled by enzymes.

- (a) Describe TWO factors that affect enzyme activity in the **cell**.

Factor 1: \_\_\_\_\_

\_\_\_\_\_

Factor 2: \_\_\_\_\_

\_\_\_\_\_

- (b) Explain how ONE of the factors in part (a) affects enzyme activity.

Factor: \_\_\_\_\_

Effect: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- (c) Give a reason to explain why cell respiration is controlled by enzymes.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(d) Explain how the structure of enzymes is related to the function of enzymes in a cell.

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**QUESTION THREE: CELL ORGANELLES**Assessor's  
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Some unicellular organisms are able to move.

- (a) Name TWO organelles that unicellular organisms use for movement.

Organelle 1: \_\_\_\_\_

Organelle 2: \_\_\_\_\_

Mitochondria are found in cells.

- (b) Explain why the number of mitochondria found in a moving unicellular organism will differ from the number found in a non-moving unicellular organism.

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The diagrams below show a plant cell and an animal cell.

Plant cell	Animal cell
<p>[FOR COPYRIGHT REASONS, THIS RESOURCE CANNOT BE REPRODUCED HERE. SEE BELOW.]</p>	

(a) Identify TWO cell organelles or components found in **both** cells and describe the function of each.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slight shadow on its right side, suggesting it's resting on a surface.

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- This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.









