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NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

SUPERVISOR'S USE ONLY

Level 1 Biology, 2011

90929 Demonstrate understanding of biological ideas relating to a mammal as a consumer

9.30 am Friday 18 November 2011

Credits: Three

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of biological ideas relating to a mammal as a consumer.	Demonstrate in-depth understanding of biological ideas relating to a mammal as a consumer.	Demonstrate comprehensive understanding of biological ideas relating to a mammal as a consumer.

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.

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

TOTAL

ASSESSOR'S USE ONLY

You are advised to spend 60 minutes answering the questions in this booklet.

QUESTION ONE: DIGESTION AND ENZYMES

There are three main groups of **enzymes** found in the digestive systems of mammals. Enzymes are produced and passed out of glands like the salivary gland or the pancreas, and into the gut where they carry out chemical reactions on the food eaten.

- (a) Describe what digestive enzymes do.

- (b) Fill in the gaps in the table below to complete the information about each of the THREE digestive enzyme groups.

Name of enzyme	Where enzyme produced	Where enzyme carries out chemical reaction	What type of food it digests	Product of enzyme reaction
			Carbohydrates	
Pepsin (a protease)		Stomach		
	Pancreas		Lipids/Fats	

- (c) A mammal's digestive system has several other **adaptations** that increase the **effectiveness** of digestive enzyme action.

Use the diagram below of a rabbit's digestive system to help you **discuss** TWO of these adaptations.

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QUESTION TWO: FOOD AND ENERGY

Mammals get the energy they need from the food they eat, and they use this energy to carry out all their required life processes.

- (a) List TWO things that mammals need energy for.

1 _____

2 _____

- (b) There are THREE systems that work together to ensure the energy in food gets to the cells in a mammal's body, so it can use it to carry out life processes. In the table below, one system has been completed.

Give the name and description of the other two systems.

Organ system	Description
Circulatory System	An organ system that transports material in blood such as food or oxygen to every cell in the body and removes waste such as carbon dioxide.

- (c) The three systems described above in part (b) work together to enable the mammal to carry out cellular respiration. This process is vital to ensure the survival of mammals.

Complete the cellular respiration equation, and discuss the process of cellular respiration.

Your answer should include:

- an explanation of the purpose of cellular respiration
- a summary of the steps involved
- reasons why cellular respiration makes other life processes possible.

