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NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

SUPERVISOR'S USE ONLY

Level 1 Biology, 2014

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

2.00 pm Monday 17 November 2014
Credits: Three

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

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 2–10 in the correct order and that none of these pages is blank.

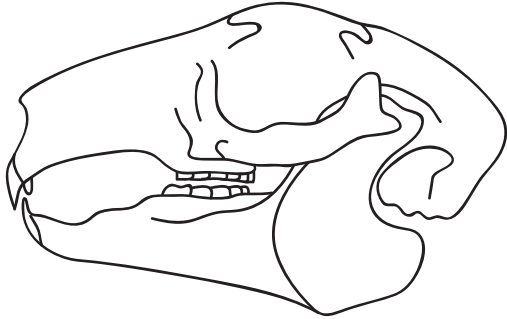
YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

TOTAL

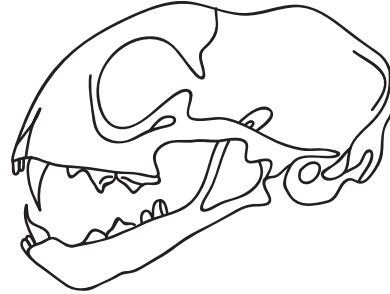
ASSESSOR'S USE ONLY

QUESTION ONE: PHYSICAL DIGESTION

For food to pass from the mouth to the stomach, several processes need to occur. One of these processes is **physical digestion**, where food particles are mechanically broken down by the teeth. The two diagrams below show skulls of a herbivore and a carnivore. The teeth of **herbivore** and **carnivore** mammals are different because they eat different types of food.



Skull A



Skull B

Source (adapted): P. Poletti & R. McGowan, *Year 11 Biology, NCEA Level 1: Achievement Standard Biology 1.5 Demonstrating understanding of biological ideas relating to a mammal as a consumer* (Hamilton: ABA Books Ltd, 2011), p 19.

- (a) Identify which skull belongs to a herbivore, and which skull belongs to a carnivore. Give reasons for your choices.

Skull A: _____

Reason: _____

Skull B: _____

Reason: _____

(b) Use both skull diagrams on the previous page to discuss the teeth of a herbivore AND the teeth of a carnivore.

Your answer should:

- identify the different combinations of teeth for each mammal
- explain why the different combinations of teeth are needed
- justify why the similarities AND differences exist.

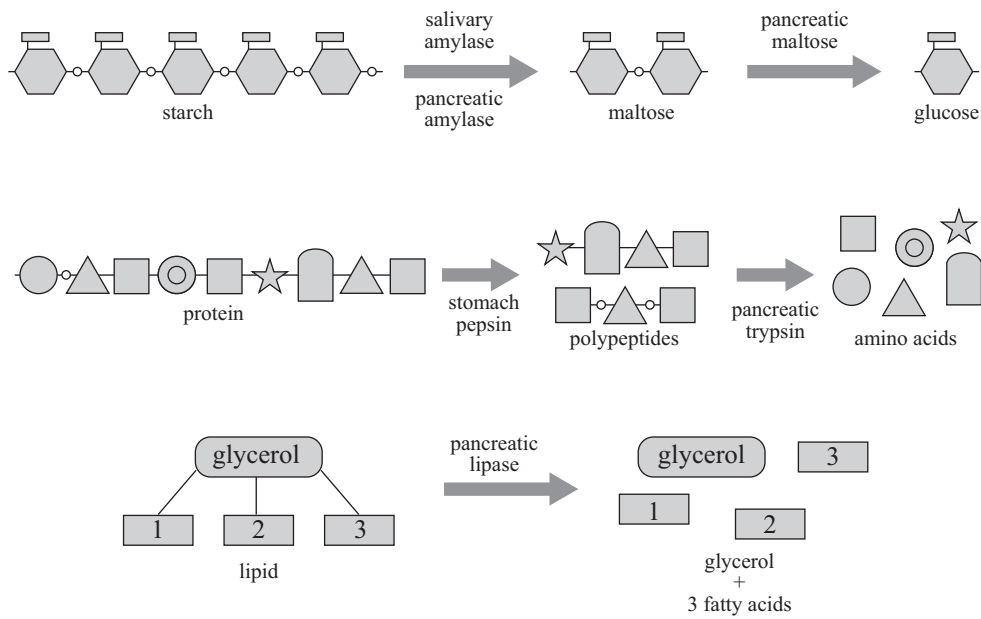
You may use diagrams to support your answer.

QUESTION TWO: DIGESTIVE ENZYMESASSESSOR'S
USE ONLY

(a) Describe the role of enzymes in digestion.

(b) Explain why more than one type of enzyme is required for digestion.

(c) The diagrams below show the effect of enzymes on all three main food groups during digestion.



Source (adapted): P. Poletti & R. McGowan, *Year 11 Biology, NCEA Level 1: Achievement Standard Biology 1.5 Demonstrating understanding of biological ideas relating to a mammal as a consumer* (Hamilton: ABA Books Ltd, 2011), p 33.

Discuss how enzymes carry out their function in the digestive tract, and use the examples in the diagram above to support your answer.

Your answer should:

- explain how pH can influence enzyme activity
- compare the optimum pH for amylase, pepsin, and lipase reactions AND relate this to different parts of the digestive tract.

You may use diagrams to support your answer.

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

- (b) A predator such as a cheetah is able to accelerate very quickly to chase its prey. A cheetah's speed can reach 96 kilometres per hour; however it can maintain this speed for only a very short period of time.



<http://eofdreams.com/photo/cheetah/05/>

Discuss the type of respiration the cheetah is using to release energy while chasing its prey.

Your answer should:

- describe the type of respiration the cheetah is most likely using while accelerating (or speeding up)
- provide reasons to justify your answer, AND link the named respiration to the type and amount of energy released.

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