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90166

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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

Level 1 Biology, 2004

90166 Describe the functioning of human digestive and skeletomuscular systems

Credits: Four
9.30 am Thursday 25 November 2004

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 pages provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–11 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.

Achievement Criteria *For Assessor's use only*		
Achievement	**Achievement with Merit**	**Achievement with Excellence**
Describe biological ideas relating to the functioning of human digestive and skeletomuscular systems. ☐	Describe biological ideas relating to the functioning of human digestive and skeletomuscular systems. ☐	Describe biological ideas relating to the functioning of human digestive and skeletomuscular systems. ☐
	Explain biological ideas relating to the functioning of the human digestive or the skeletomuscular systems. ☐	Discuss biological ideas relating to the functioning of the human digestive or the skeletomuscular systems. ☐
Overall Level of Performance (all criteria within a column are met) ☐		

You are advised to spend 50 minutes answering the questions in this booklet.

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QUESTION ONE: MUSCLING IN

The single-celled ancestors of animals had their weight supported by water and were able to move by cilia or other simple organelles. The evolution of large and more complex organisms (animals) led to the development of more complex body systems including the skeletomuscular system.

(a) Describe TWO functions of **muscles** in the human body.

(b) Explain what is meant by **voluntary and involuntary** muscles. Give at least ONE example of each.

(c) The diagram below shows the movement of the arm from position **a** to position **b**. Discuss how the main components of the arm work together to make this movement.

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http://www.sirinet/~jgjohnso/muscle.html

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QUESTION TWO: PASS THE BONE

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(a) Giving at least ONE example, **describe** how the skeleton protects important organs of the body.

(b) Describe ONE of the following bone injuries: Circle the injury you have chosen.

Greenstick fracture; **Simple fracture;** **Open/Compound fracture.**

(c) A joint is a place where two bones meet.

Explain why the body needs more than one **type** of joint.

(d) **Discuss** why **older** females are most likely to be at risk of osteoporosis.

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QUESTION THREE: TIME TO DIGEST

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(a) Complete any TWO rows of the following table:

Body part	Description of the function in the digestive system
Teeth	
Sphincter	
Villi	

(b) Rod often likes to eat his breakfast in bed. **Explain** why he doesn't need to be standing or sitting in order for food to reach his stomach. You can use a diagram to help you if you wish.

[For copyright reasons, this resource cannot be reproduced here. See below.]

http://www.esa.int/export/esaHS/index.html

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(c) Discuss the statement, '**A healthy diet and lifestyle can help to avoid disease**,' with reference to a **named** malfunction of the digestive system.

QUESTION FOUR: FOOD FOR THOUGHT

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(a) Complete the following table to **describe** the role in digestion of the named digestive juices:

Digestive juice	Produced by	Role in digestion
Saliva	Salivary glands	
Gastric juice	Stomach	
Bile	Liver	

(b) All of the digestive juices contain enzymes. **Explain** why more than one type of enzyme is needed in the human digestive system.

(c) The pancreas produces pancreatic juice that contains enzymes that digest carbohydrates, proteins and fats. Gallstones in the liver or gallbladder cut down bile secretion, severely disrupting the digestive process and changing the pH significantly.

Discuss how this change in pH level affects the digestive properties of pancreatic juice.

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QUESTION FIVE: EGESTION

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(a) **Describe** the function of the colon.

(b) **Explain** why the colon does **not** need villi.

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

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Question number