



For Supervisor's use only

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90178



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA



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

Level 1 Human Biology, 2006

90178 Describe functioning of human circulatory, respiratory and excretory systems

Credits: Six

9.30 am Wednesday 22 November 2006

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 2–11 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.

<i>For Assessor's use only</i>		Achievement Criteria	
Achievement		Achievement with Merit	Achievement with Excellence
Describe functioning of human circulatory, respiratory and excretory systems.	<input type="checkbox"/>	Describe functioning of human circulatory, respiratory and excretory systems. <input type="checkbox"/>	Describe functioning of human circulatory, respiratory and excretory systems. <input type="checkbox"/>
		Explain functioning of human circulatory or respiratory or excretory systems. <input type="checkbox"/>	Discuss functioning of human circulatory or respiratory or excretory systems. <input type="checkbox"/>
Overall Level of Performance (all criteria within a column are met)		<input type="checkbox"/>	

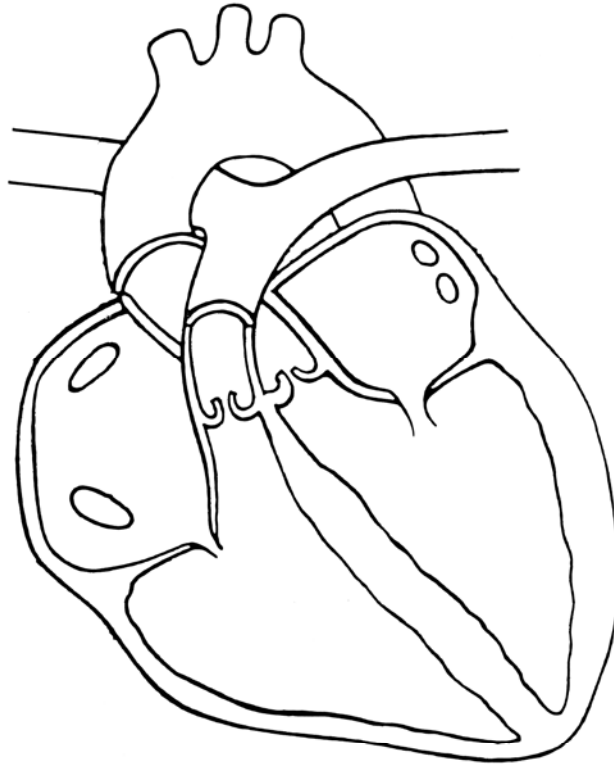
You are advised to spend 70 minutes answering the questions in this booklet.

QUESTION ONE: CIRCULATORY SYSTEM

The diagram below shows some of the main structures of the human heart.

Right side

Left side

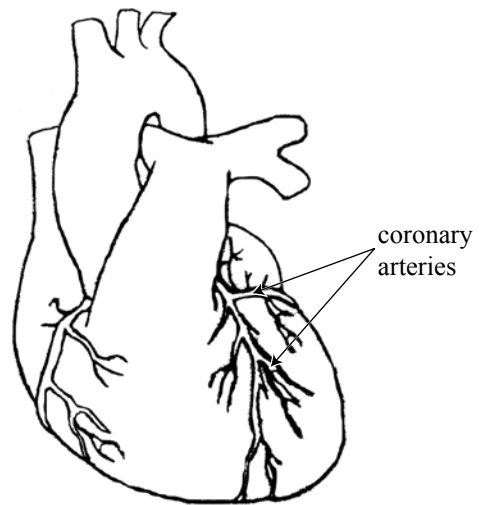


- (a) On the diagram, **circle** clearly the places in the heart where you would find **valves**.
- (b) Describe the function of these valves.
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- (c) On the diagram, **draw** a vena cava **AND** a pulmonary vein to show where they enter the heart.
Label these two blood vessels.

(d) Explain ONE **structural** difference between the pulmonary artery and the pulmonary vein.

The diagram, below right, shows the coronary arteries on the outside of the heart.

(e) Describe the **function** of the coronary arteries.



(f) (i) Identify TWO **lifestyle** factors other than smoking that may lead to coronary heart disease.

(1) _____

(2) _____

(ii) Explain how ONE of these factors may cause coronary heart disease.

QUESTION TWO: RESPIRATORY SYSTEM

- (a) Describe how each part below works to draw air **into** the lungs.

Diaphragm	
Intercostal muscles	

- (b) Describe TWO **disadvantages** of breathing through the **mouth** rather than the nose.

- (1) _____
(2) _____

- (c) Give the function of the cartilage that surrounds the trachea and bronchi.

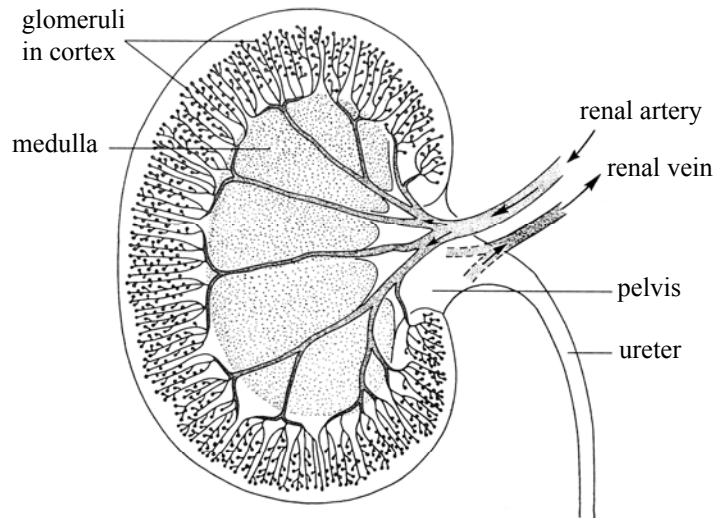
- (d) Explain how **breathing** keeps a person alive.

- (e) Explain the purpose of **respiration**.

QUESTION THREE: EXCRETORY SYSTEM

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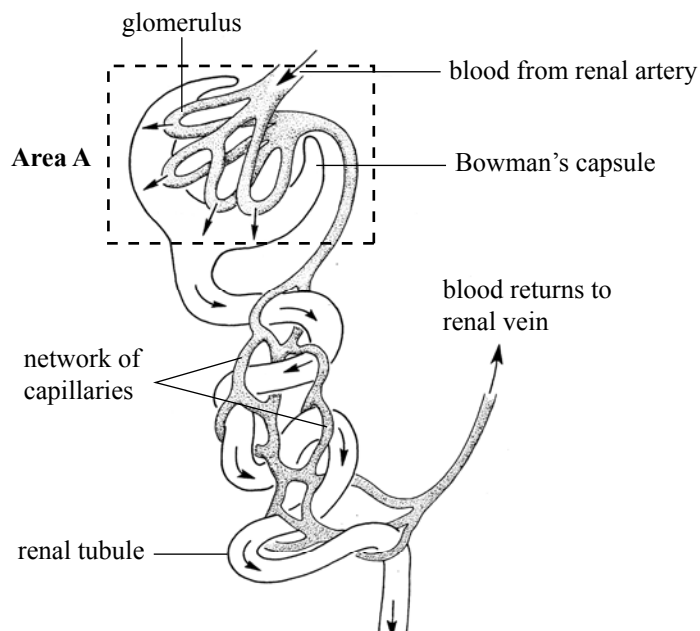
Section through a kidney



(a) Describe the function of the renal **artery**.

(b) Describe ONE **function** of the kidney.

Each kidney is made up of many nephrons. The diagram below shows part of a nephron.



- (c) Explain what is happening in **Area A** in the diagram of the nephron on the previous page.

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When there is a decrease in the amount of urine produced over a period of time, substances such as salts and minerals in the urine may stick to the walls of the kidney to form kidney stones.

- (d) Explain why a person who has had a kidney stone should drink large amounts of water to prevent another kidney stone forming.

- (e) Describe a possible outcome of a kidney stone forming in the **ureter**.

- (f) Describe a **difference** between urea and urine.

Note that Question Three
continues on the next page.

