

90178



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

For Supervisor's use only

Level 1 Human Biology, 2008

90178 Describe functioning of human circulatory, respiratory and excretory systems

Credits: Six

2.00 pm Wednesday 19 November 2008

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.

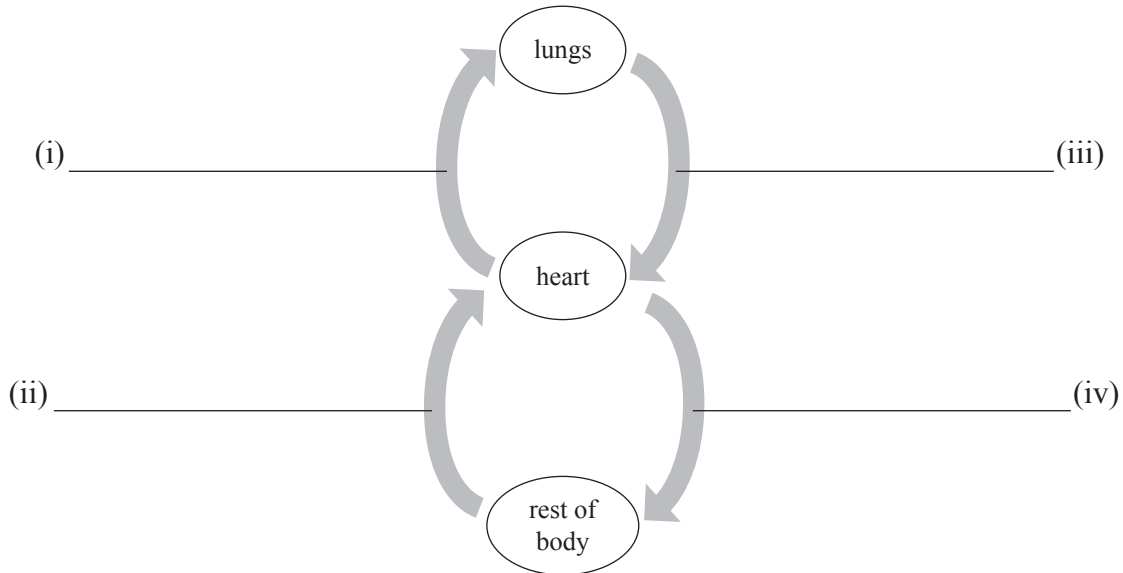
<i>For Assessor's use only</i>	Achievement Criteria	
Achievement	Achievement with Merit	Achievement with Excellence
Describe functioning of human circulatory, respiratory and excretory systems. <input type="checkbox"/>	Describe functioning of human circulatory, respiratory and excretory systems. <input 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.

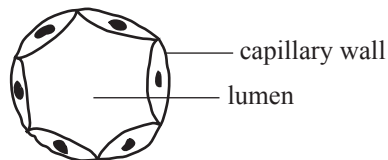
QUESTION ONE : CIRCULATORY SYSTEM

- (a) On the diagram below, **name** the four major blood vessels that transport blood between the organs, as shown by the arrows.

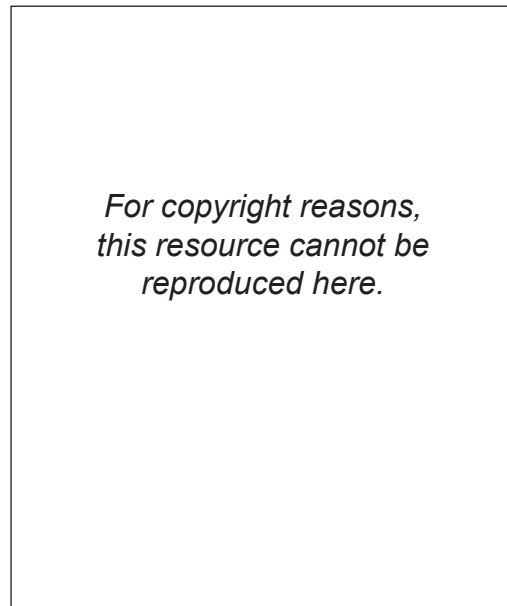
Diagram showing blood circulation in a human



- (b) **Diagram of a cross section of a capillary**



Explain how the structure **and** location of a capillary relates to its function.

QUESTION TWO: RESPIRATORY SYSTEM**Diagram showing the position of the lungs**

Adapted from Relph, Pedder, DeLacey, *Life Science* (Heinemann, 1990), p 142.

(a) Complete the table below to describe the function of the named structures.

Structure	Function
Trachea	
Cartilage	
Diaphragm	

(b) Describe THREE features of the structure of an alveolus.

- (1) _____
- (2) _____
- (3) _____

- (c) Explain how oxygen **continually moves into** the bloodstream from the alveolus.

- (d) When a person has an asthma attack, the smooth muscles of the bronchi and bronchioles contract, while the mucus secretory cells lining these tubes become overactive.

Explain how an asthma attack affects the respiratory system.

- (e) The table below compares three characteristics of inhaled and exhaled air.

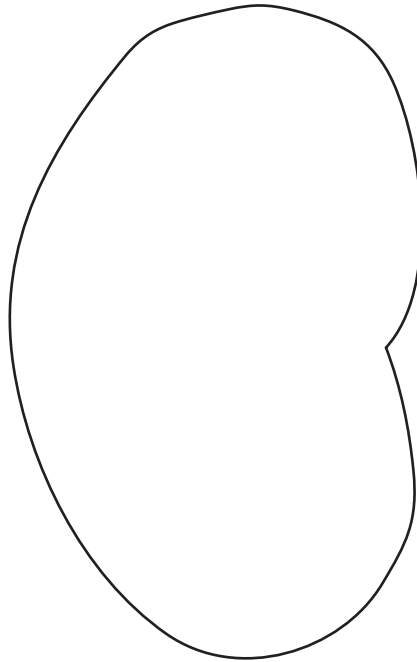
Inhaled air	Exhaled air
dusty	clean
dry	moist
cool	warm

Discuss how AND why exhaled air differs from inhaled air.

QUESTION THREE : EXCRETORY SYSTEMAssessor's
use only

- (a) Using the outline below, draw a labelled diagram to show the **internal structure** of a kidney.

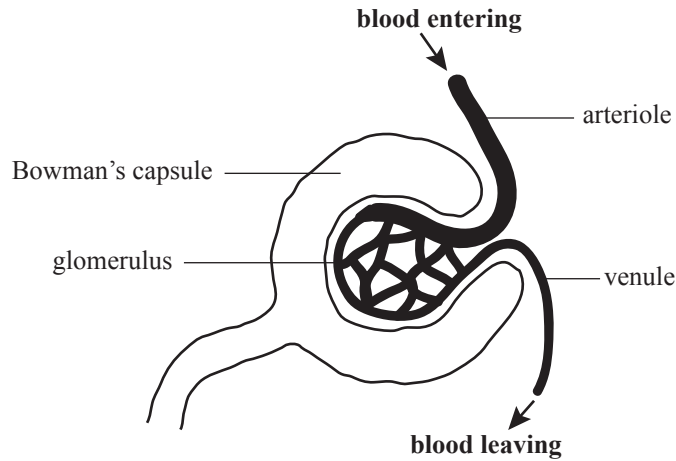
Draw label lines and name: *renal artery, renal vein, ureter, pelvis, medulla and cortex.*



- (b) Complete the table below to describe the function of the named structures.

Structure	Function
Urethra	
Renal artery	
Ureter	
Bladder	

The diagram shows a Bowman's capsule and a glomerulus.



- (c) Explain how the structures in the above diagram work together to filter the blood.

- (d) Explain why proteins are **not normally** found in the filtrate.

**Question Three continues
on the following page.**

