

90178



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

For Supervisor's use only

Level 1 Human Biology, 2007

90178 Describe functioning of human circulatory, respiratory and excretory systems

Credits: Six

9.30 am Friday 23 November 2007

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.

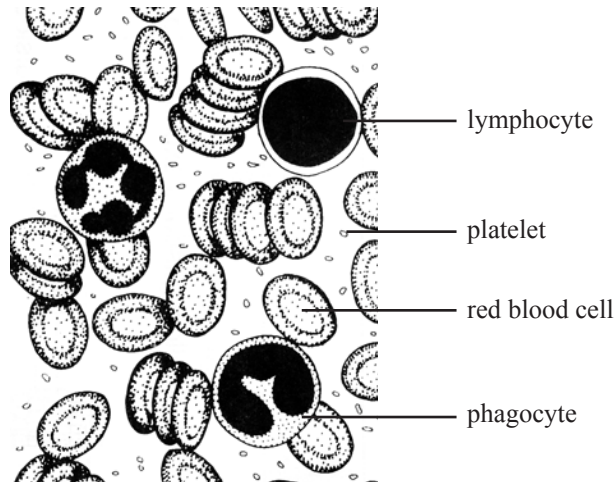
YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

<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 80 minutes answering the questions in this booklet.

QUESTION ONE: CIRCULATORY SYSTEM

The diagram below shows a sample of blood which has been highly magnified.



(a) Describe the function of two of the structures named in the diagram **other** than red blood cell.

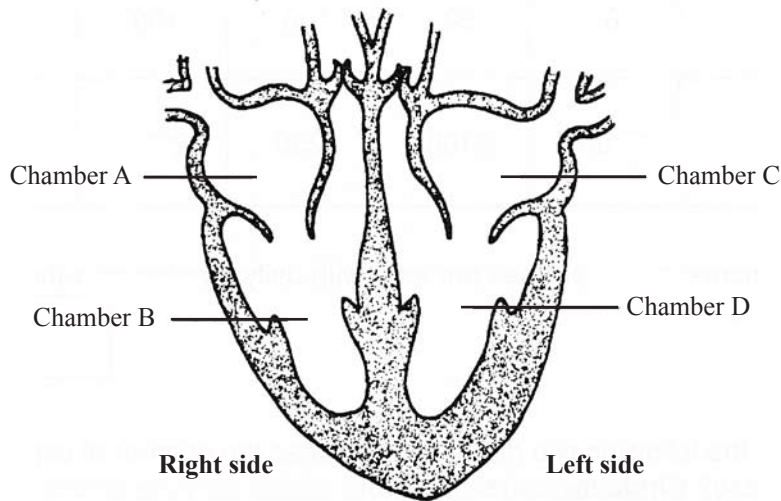
(1) _____

(2) _____

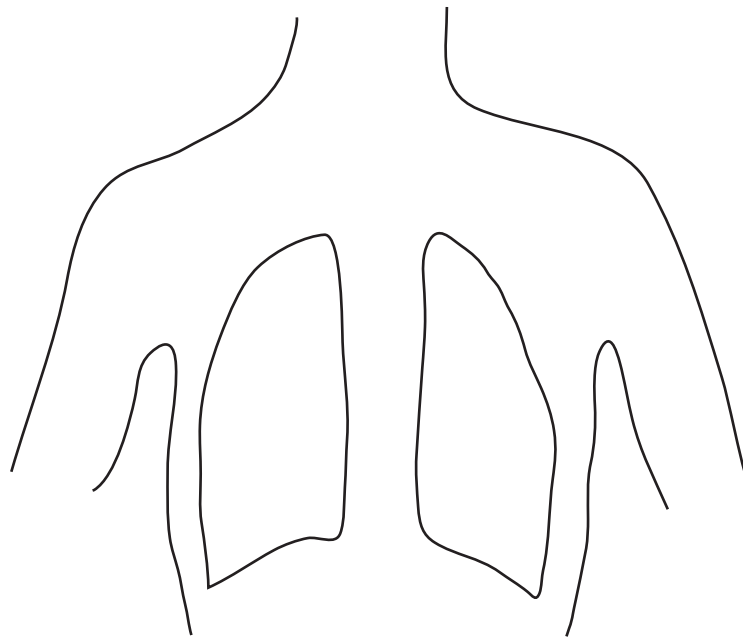
(b) Explain how the **structure** of a phagocyte helps its function.

- (c) Explain how the **shape** of a red blood cell helps in the transport of oxygen.

The diagram below shows some of the features of the human heart.



- (d) Draw **arrows** on the diagram to show the direction of blood flow through the right side **and** left side of the heart.
- (e) Explain how valves help blood to flow through the **heart**.

QUESTION TWO: RESPIRATORY SYSTEM

(a) **Draw and label** the following parts of the human respiratory system in the above diagram: **trachea, bronchus, bronchial tube** and **diaphragm**.

(b) Describe how the **muscles** of the respiratory system work **together** to **exhale air**.

(c) Describe what keeps the air passages **open** to allow air movement.

(d) Explain how the air passages are kept **clean**.

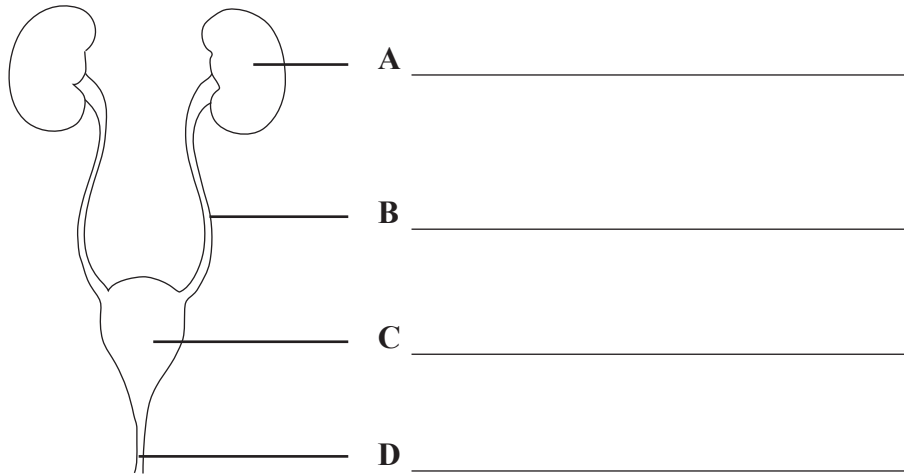
(e) Many years of smoking can damage the alveoli.

Explain how this damage affects the functioning of the lungs.

QUESTION THREE: EXCRETORY SYSTEM

The diagram below shows part of the human excretory system.

(a) Name parts A, B, C and D on the diagram.



(b) Describe the function of parts B and C.

B _____

C _____

(c) Name TWO components in blood that are **NOT** filtered out by the kidneys.

(1) _____ (2) _____

Explain why **these** components are not filtered out by the kidney.

- (d) Describe why it is important to remove **urea** from the body.

- (e) Explain **why** each day the kidneys filter 160 g of glucose **from** the blood, but the urine produced has 0 g glucose.

- (f) A kidney disease can damage the glomeruli of kidneys.

Explain how the functioning of glomeruli in a healthy kidney **differs** from the functioning of the glomeruli in a diseased kidney.

**Note that this question
continues on the next page.**

