



**Hoërskool Johan Jurgens**

**Grade 10 Life Sciences – Paper 2**

**School Based Assessment: End-Year Exam**

**Term 4 – 2025**

**Examiner: Mr K. da Gama**

**Moderator: Mrs S. Stoltz**

**Duration: 2 hours 30 minutes**

**Total Marks: 150**

**Name and Surname:** \_\_\_\_\_

**Grade: 10 key** \_\_

### **INSTRUCTIONS AND INFORMATION**

1. Read the following instructions carefully before answering the questions.
2. Answer ALL the questions.
3. This paper consists of 13 pages and includes THREE questions
4. START EACH QUESTION ON A NEW PAGE.
5. Write ALL the answers on the ANSWER SHEET PROVIDED.
6. Number the answers correctly according to the numbering system used in this question paper.
7. Present your answers according to the instructions of each question.
8. Do ALL drawings in pencil and label them in blue ink.
9. Draw diagrams, tables, or flow charts only when asked to do so.
10. The diagrams in this question paper are NOT necessarily drawn to scale.
11. You may use a non-programmable calculator, protractor, and a compass where necessary.
12. Round off all calculations to two decimals after the comma.
13. Write neatly and legibly.

## Section A

### Question 1

1.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A–D) next to the question numbers (1.1.1–1.1.10) in the ANSWER BOOK, for example 1.1.11 D.

- 1.1.1. Which ONE of the following blood vessels supply the heart with blood? (2)
- A. Aorta
  - B. Coronary artery
  - C. Superior vena cava
  - D. Pulmonary veins
- 1.1.2. Which ONE of the following statements are correct about the heart? (2)
- A. The pulmonary circuit pumps blood from the right side of the heart to the lungs.
  - B. The pulmonary circuit pumps blood from the left side of the heart to the lungs.
  - C. The systemic circuit pumps blood from the right side of the heart to the lungs.
  - D. The systemic circuit pumps blood from the right side of the heart to the body.
- 1.1.3. Decomposers ... (2)
- A. are secondary consumers.
  - B. produce their own organic food.
  - C. do not form part of food chains.
  - D. feed on dead organic matter.
- 1.1.4. Which one of the following food chains is correct? (2)
- A. Producer → carnivore → herbivore
  - B. Plants → secondary consumers → tertiary consumers
  - C. Producers → herbivores → secondary consumers
  - D. Plants → herbivores → primary consumers
- 1.1.5. Part of the biosphere which consists of soil and rocks is called the ... (2)
- A. Geosphere.
  - B. Lithosphere.
  - C. Terasphere.
  - D. Hydrosphere.

1.1.6. A general group of plants adapted to grow in extremely dry regions are referred to as ... (2)

A. Hydrophytes.  
 B. Mesophytes.  
 C. Xerophytes.  
 D. Desert plants.

1.1.7. Scientists have suggested that the trees in the Amazon jungle generate their own clouds and rain. This is most likely caused by ... (2)

A. precipitation.  
 B. evaporation.  
 C. condensation.  
 D. transpiration.

1.1.8. The total sunlight energy landing on an ecosystem is 4 million kilojoules per square meter ( $\text{kJm}^{-2}$ ). Four percent of this is fixed during photosynthesis and five percent of this is fixed energy is passed on to the primary consumer. What is the energy intake of the primary consumer? (2)

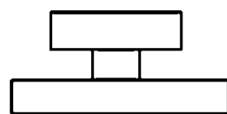
A.  $800 \text{ kJ/m}^2$   
 B.  $8000 \text{ kJ/m}^2$   
 C.  $20\,000 \text{ kJ/m}^2$   
 D.  $360\,000 \text{ kJ/m}^2$

1.1.9. What is the initial energy source for most biological communities? (2)

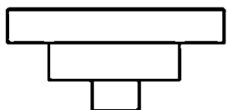
A. The soil.  
 B. The sun.  
 C. Plants.  
 D. Producers.

1.1.10. Which diagram best illustrates the flow of energy through a parasitic ecosystem with three trophic levels? (2)

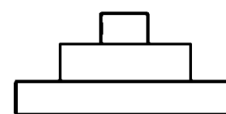
A.



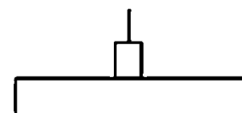
C.



B.



D.



[20]

1.2. Give the correct biological term for each of the following descriptions. Write only the term next to the question number (1.2.1 to 1.2.10) in the ANSWER BOOK.

- 1.1.1. The substance in shells which is a result of carbon dioxide in the oceans.
- 1.1.2. The circulatory system where blood stays in the blood vessels.
- 1.1.3. The measure of how acidic or alkaline a substance is.
- 1.1.4. The gas that was in extremely small quantities or completely absent when life started on Earth millions of years ago.
- 1.1.5. Exotic species of plant or animal that do not naturally live in a particular habitat and can cause harm to the ecosystem.
- 1.1.6. The process of finding out the ages of rocks and fossils by comparison with another fossil.
- 1.1.7. A term for when an organism becomes inactive in winter.
- 1.1.8. A rise in the average temperature on Earth
- 1.1.9. The removal of trees from a particular area.
- 1.1.10. Massive sections of the Earth's crust that move as a single piece.

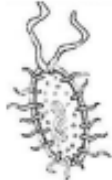
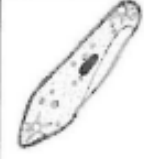



[10]

1.3. Indicate whether each of the statements in COLUMN A, applies to A ONLY, B ONLY, BOTH A and B, or NONE of the items in COLUMN B. Write A only, B only, both A and B, or none next to the question numbers (1.3.1–1.3.5) in the ANSWER BOOK.

Column A		Column B
1.3.1.	Evidence for continental drift.	A. Vein
		B. Artery
1.3.2.	Abiotic factors.	A. Predation
		B. Aspect
1.3.3.	A kingdom without a definite nucleus.	A. Monera
		B. Protista
1.3.4.	Binomial classification system.	A. Exotic species
		B. Alien species
1.3.5.	Living organisms that do not naturally live in South Africa.	A. Darwin
		B. Linnaens

[5 x 2 = 10]

1.4. According to the Five-Kingdom system of classification, each of the organisms shown below belongs to a different Kingdom. Complete the table by filling in the missing words. Write down only the question number (1.4.1–1.4.10) and the answer, for example 1.4.11 Animalia.

<b>Organism</b>					
<b>Kingdom</b>	1.4.1	Protista	Fungi	1.4.2	Animalia
<b>Genus</b>		Paramecium	Agaricus	Protea	Bos
<b>Species</b>		caudatum	Bisporus	Cynaroides	Taurus
<b>Prokaryote or Eukaryote</b>	1.4.3	1.4.4	Eukaryote	Eukaryote	1.4.5
<b>Unicellular or Multicellular</b>	1.4.6	Unicellular or Multicellular	Multicellular	1.4.7	Multicellular
<b>Method of Feeding</b>	Autotrophic and heterotrophic	Autotrophic, Heterotrophic and Saprophytic	1.4.8	1.4.9	
<b>Scientific name</b>		1.4.10			

[1 x10 = 10]

TOTAL SECTION A: [50]

## Section B

### Question 2

- 2.1. Nathan and Nqaba heard that the Spekboom plant is very good at storing carbon dioxide from the atmosphere which helps prevent the extreme increase in the Earth's temperature called global warming. This carbon dioxide is used by plants for photosynthesis.

They decide to investigate how quickly different plants absorb CO<sub>2</sub>.

They got three different types of plants from their local nursery: a Spekboom, an Aloe and a Prickly Pear. They make sure that the plants are the same height. They plant them in equal sized pots with the same type and amount of soil. All three plants are placed in the same location and get equal amounts of water.

They take the weight/mass of their plants in the pots at the start of the investigation. They then leave the plants to grow for one month and measure their weight/mass again.

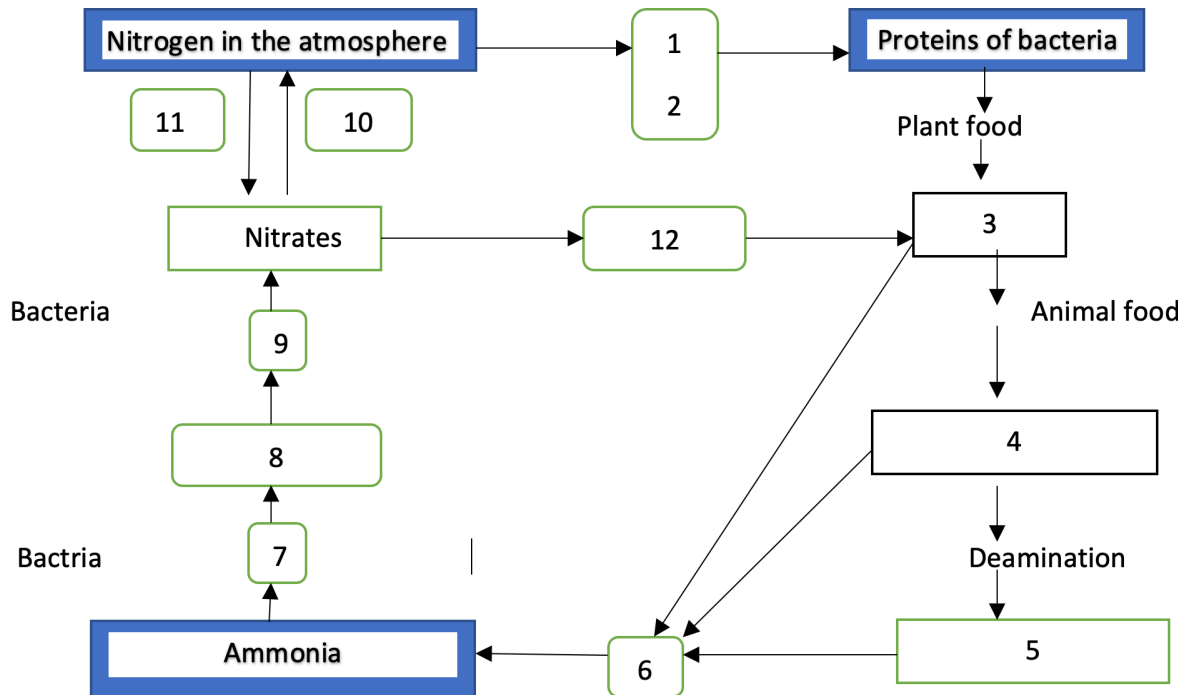
The results are shown in the table below.

Plant	Weight/Mass (g)		
	Start	End	Increase
Aloe	800	832	32
Prickly Pear	800	843	43
Spekboom	800	871	71

- 2.1.1. Identify the independent variable. (1)
- 2.1.2. Plot a bar graph of weight/mass increase of the three plants. (6)
- 2.1.3. What was the purpose of measuring the starting weight/mass of the plants? (1)
- 2.1.4. Identify TWO ways that Nathan and Nqaba ensured the validity of their investigation. (2)
- 2.1.5. How could they improve the reliability of their investigation? (1)
- 2.1.6. Calculate the percentage increase in mass from the start to the end of the investigation of the Spekboom plant. (2)
- 2.1.7. Explain how using the weight gain of the plants will give Nathan and Nqaba an idea of how much CO<sub>2</sub> the plants are absorbing. (2)

**[15]**

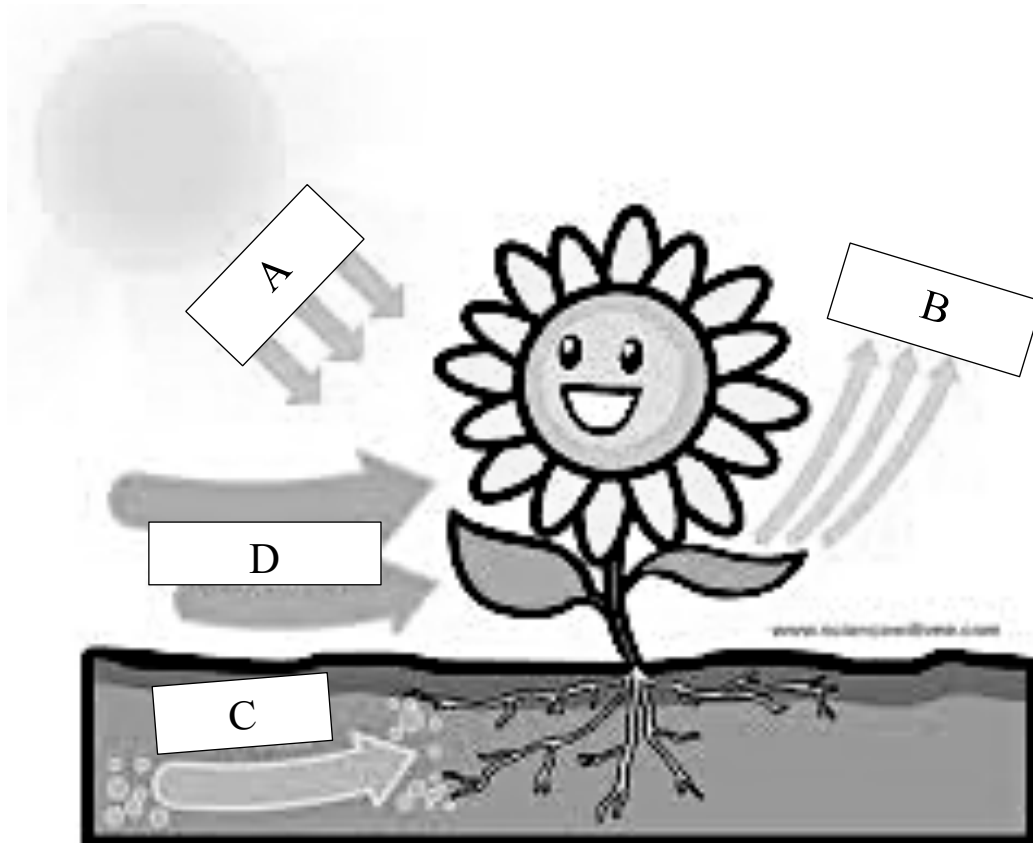
2.2. Study the following diagram which shows the water cycle and part of the ecosystem and answer the following questions.



- 2.2.1. Complete the diagram above of the nitrogen cycle in nature by writing down the missing word(s) next the corresponding numbers. (12)
- 2.2.2. What is the nitrogen cycle? (2)
- 2.2.3. Why do living organisms need nitrogen? (2)
- 2.2.4. In what form do plants absorb nitrogen? (2)
- 2.2.5. How do animals get nitrogen? (2)

**[20]**

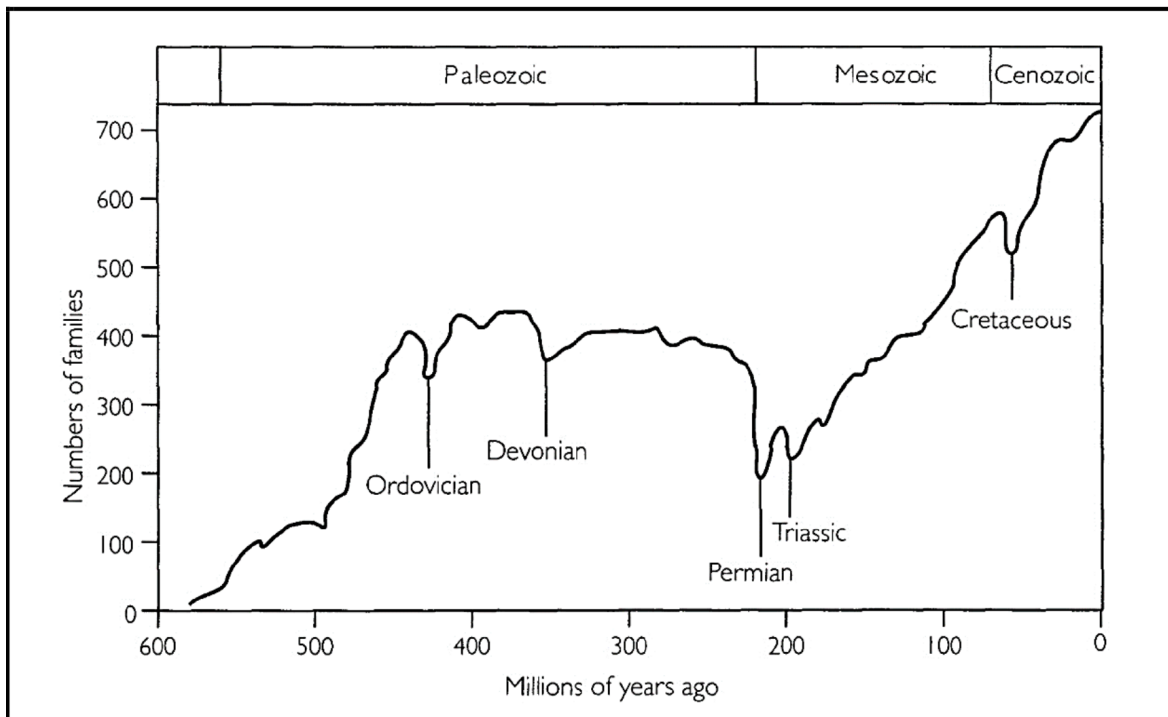
2.3. The diagram below shows the sun's rays hitting the earth.



- 2.3.1. Which abiotic factor is represented by A in the diagram above? (1)
- 2.3.2. Explain how the tilt of the Earth's axis causes seasons. (3)
- 2.3.3. Changes in the length of the day can affect seasonal temperatures.
- a. What do we call the number of hours of light a plant or animal receives every day? (1)
  - b. What is migration? (2)
  - c. Give ONE reason why an animal might migrate. (1)

**[8]**

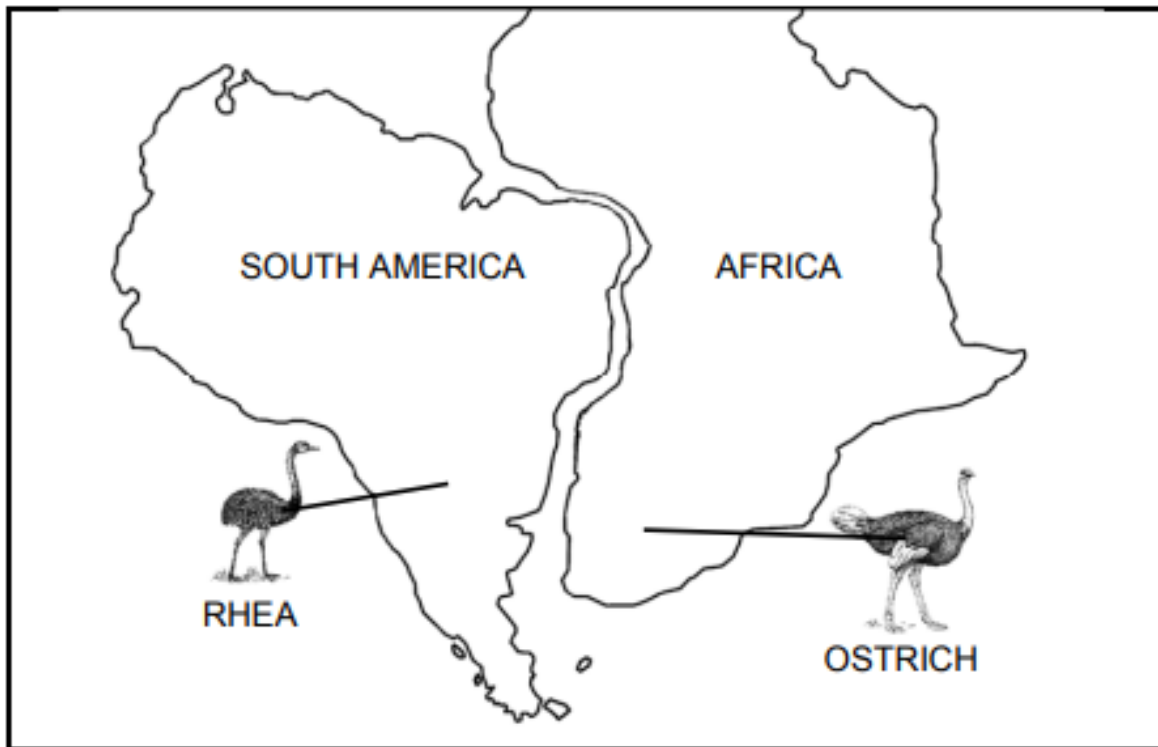
2.4. The diagram below represents a simplified geological time scale showing how the number of families (groups of related species) has changed over a period of time.



- 2.4.1. What is a mass extinction? (1)
- 2.4.2. When did the Cenozoic era begin? (1)
- 2.4.3. Which mass extinction took place towards the end of Paleozoic era? (1)
- 2.4.4. Explain why the number of families increased rapidly after a mass extinction. (4)

[7]

2.5. The diagram below shows how South America and Africa were once joined in the past.

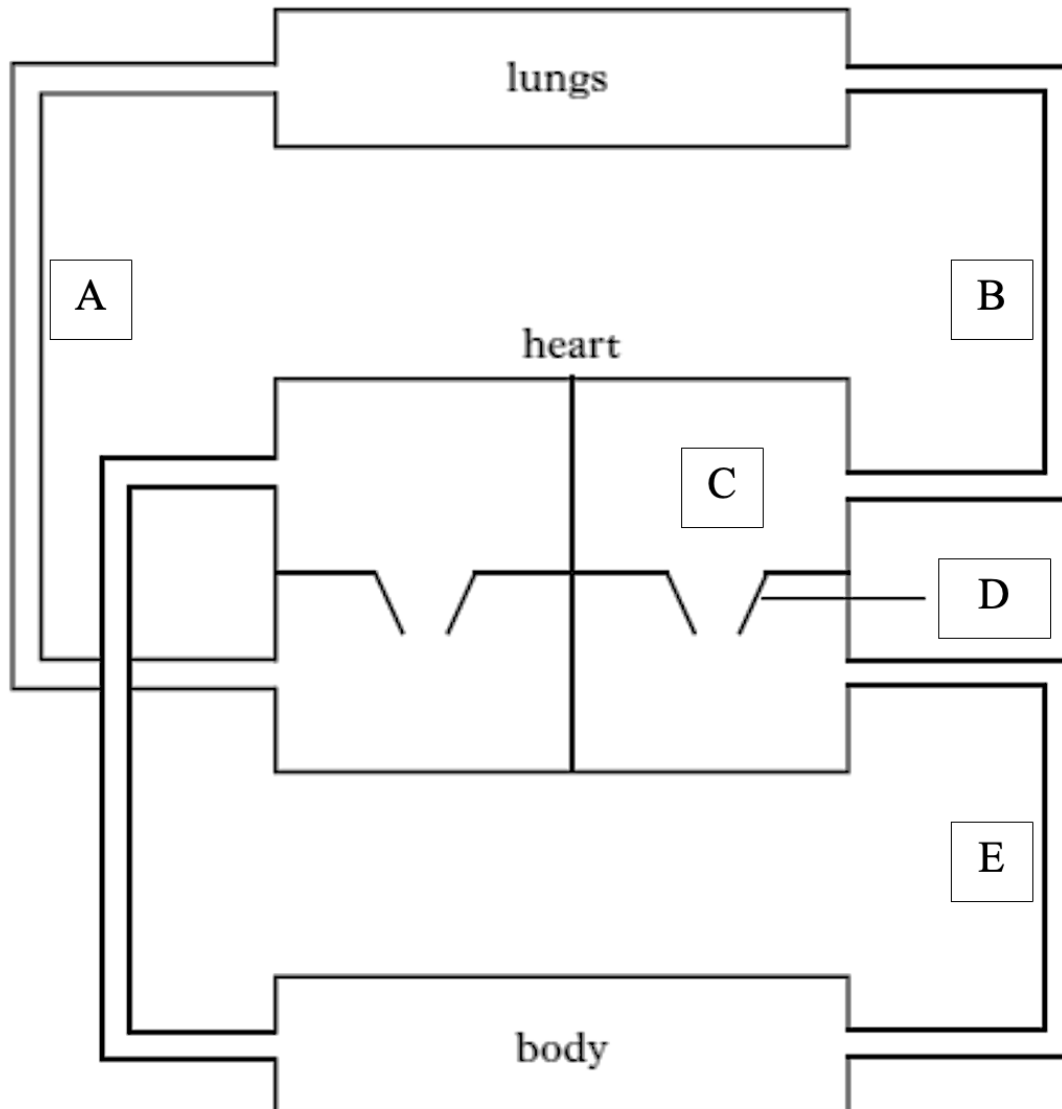


- 2.5.1. Which of the two major super continents did South America and Africa belong to? (1)
- 2.5.2. What do we call the study of the distribution of existing and extinct organism in different geographical areas? (1)
- 2.5.3. Flightless birds like the rhea and ostrich are different species, yet they share many similar characteristics. Explain how such similar birds that cannot fly ended up on continents separated by a vast ocean. (4)
- 2.5.4. Polar bears live in the North Pole, the Arctic, while penguins live in the South Pole, the Antarctic, both of which are very similar climates. Suggest a reason why penguins and polar bears do not live at both poles. (4)

[12]

### Question 3

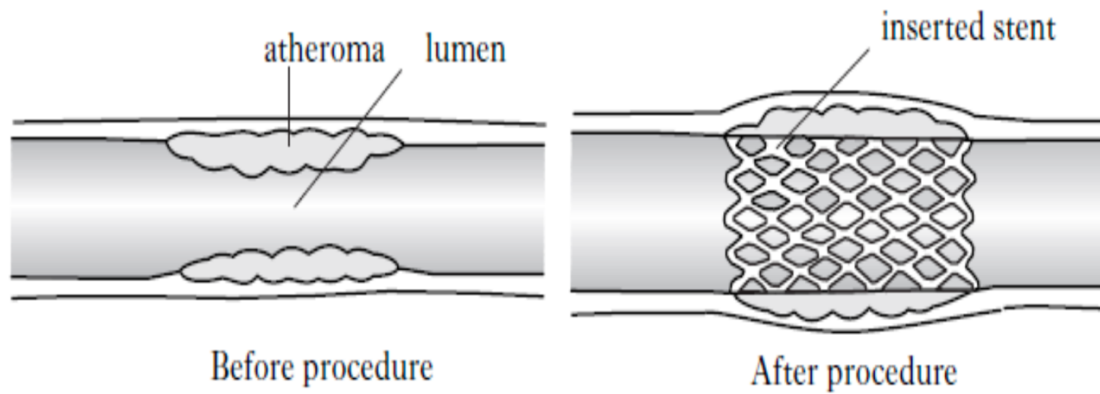
3.1. The diagram below shows the human circulatory system. Study the diagram and answer the questions that follow.



- 3.1.1. Identify parts A, B and D. (3)
- 3.1.2. Give the LETTER ONLY of the parts that prevent the backflow of blood into the atria. (2)
- 3.1.3. Name the part that brings blood from the lower half of the body back to the heart. (1)
- 3.1.4. State whether the blood is oxygenated or deoxygenated in vessels:
- a) A (1)
- b) E (1)

**[8]**

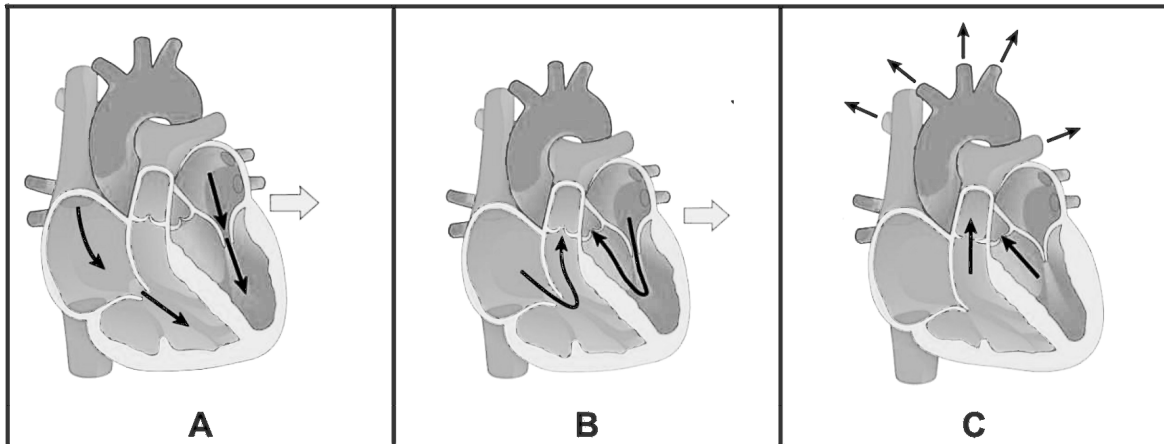
- 3.2. A stent is a narrow, wire mesh tube that can be inserted into a blood vessel. It may be used to treat atherosclerosis in the blood vessels of the heart. The diagram below shows a blood vessel before and after the procedure to insert a stent. Study the diagram and answer the questions that follow.



- 3.2.1. What causes arteries to block? (2)
- 3.2.2. Explain how the wire cage helps a person with a blocked artery. (2)
- 3.2.3. Name THREE things people can do to help prevent blockages in their blood vessels. (3)
- 3.2.4. Many people still get confused on the difference between a stroke and a heart attack. Tabulate TWO main differences between a stroke and a heart attack. (3)

**[10]**

3.3. Examine the diagram below and answer the questions that follow.



[www.courses.lumen.biology.com]

- 3.3.1. Name stages **A**, **B** and **C** respectively. (3)
- 3.3.2. Describe what happens in the heart during phase **B**. (4)
- 3.3.3. Name the special tissue that sends electrical impulses to the muscle fibre of the atria causing them to contract. (1)
- 3.3.4. How long does each cardiac cycle last? (1)
- 3.3.5. Explain how high carbon dioxide levels in the blood will cause a change in the speed at which the heart beats. (3)

3.4. Study the table below and answer the questions that follow.

This table represents the percentage incidence of high cholesterol in different population groups in South Africa.

Population groups	% of high cholesterol
Black	28
White	85
Coloureds	81
Indian	82

- 3.4.1. Draw a pie chart of the population groups making up the total number of people with high cholesterol. (9)
- 3.4.2. Which group has the highest incidence of high cholesterol? (1)

[22]

**TOTAL SECTION B: [100]**

**TOTAL: 150**

**GRADE 10 LIFE SCIENCES P2 END-YEAR EXAM GRID 2025**  
**TERM 4**  
**MARKING GUIDELINES**

SECTION A Question 1	Cognitive Levels				Question Levels					
	A	B	C	D	Easy	Moderate	Difficult	Very difficult	Investigation/ Experiment	Total Question 1 (50)
<i>Everything in term 1 &amp; 2</i>	Basic knowledge	Comprehension	Application	Analysis, Synthesis & Evaluation						
1.1.1.	X				X					2
1.1.2.	X				X					2
1.1.3.	X				X					2
1.1.4.	X				X					2
1.1.5.	X				X					2
1.1.6.	X				X					2
1.1.7.	X				X					2
1.1.8.	X				X					2
1.1.9.	X				X					2
1.1.10.	X				X					2
1.2.1.	X				X					1
1.2.2.	X				X					1
1.2.3.	X				X					1
1.2.4.	X				X					1
1.2.5.	X				X					1
1.2.6.	X				X					1
1.2.7.	X				X					1
1.2.8.	X				X					1
1.2.9.	X				X					1
1.2.10.	X				X					1
1.3.1.	X				X					2
1.3.2.	X				X					2
1.3.3.	X				X					2
1.3.4.	X				X					2
1.3.5.	X				X					2

1.4.1.	X				X					1
1.4.2.	X				X					1
1.4.3.	X				X					1
1.4.4.	X				X					1
1.4.5.	X				X					1
1.4.6.	X				X					1
1.4.7.	X				X					1
1.4.8.	X				X					1
1.4.9.	X				X					1
1.4.10.	X				X					1
Total Q 1	50									50

SECTION B	Cognitive Levels				Question Levels					Total Question 2 (50)	
	Question 2	A	B	C	D	Easy	Moderate	Difficult	Very difficult		Investigation/ Experiment
<i>Biosphere to ecosystems</i>	Basic knowledge	Comprehension	Application	Analysis, Synthesis & Evaluation							
2.1.1.	X				X					X	1
2.1.2.				X		X					6
2.1.3.		X			X						1
2.1.4.	X				X						2
2.1.5.		X			X						1
2.1.6.			X			X					2
2.1.7.		X					X				2
2.2.1.		X					X				12
2.2.2.	X				X						2
2.2.3.		X			X						2
2.2.4.	X				X						2
2.2.5.	X				X						2
2.3.1.	X				X						1
2.3.2.		X				X					3
2.3.3. a)	X				X						1
2.3.3. b)	X				X						2
2.3.3. c)	X				X						1

2.4.1.	X				X					1
2.4.2.		X			X					1
2.4.3.		X			X					1
2.4.4.		X			X					4
2.5.1.	X				X					1
2.5.2.	X				X					1
2.5.3.		X				X				4
2.5.4.				X		X				4
Total Q 2	17	31	2	10						60

Question 3	Cognitive Levels				Question Levels					Total Question 3 (50)
	A	B	C	D	Easy	Moderate	Difficult	Very difficult	Investigation/ Experiment	
<i>Biodiversity &amp; Classification</i>	Basic knowledge	Comprehension	Application	Analysis, Synthesis & Evaluation						
3.1.1.	X				X					3
3.1.2.	X				X					2
3.1.3.	X				X					1
3.1.4. a)		X				X				1
3.1.4. b)		X				X				1
3.2.1.		X				X				2
3.2.2.		X				X				2
3.2.3.	X				X					3
3.2.4.				X		X				3
3.3.1.	X				X					3
3.3.2.		X				X				4
3.3.3.	X				X					1
3.3.4.	X				X					1
3.3.5.		X					X			3
3.4.1.				X		X				9
3.4.2.	X				X					1
<b>Total Q 3</b>	15	13	0	12						40

<b>SUMMARY</b>										
<b>Quest 1</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>						<b>50</b>
<b>Quest 2</b>	<b>17</b>	<b>31</b>	<b>2</b>	<b>10</b>						<b>50</b>
<b>Quest 3</b>	<b>15</b>	<b>13</b>	<b>0</b>	<b>12</b>						<b>50</b>
<b>Total</b>	<b>82</b>	<b>40</b>	<b>2</b>	<b>22</b>						<b>[150]</b>



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**Grade: 10 key** \_\_

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12. Round off all calculations to two decimals after the comma.
13. Write neatly and legibly.

## Section A

### Question 1

#### 1.1

- |         |    |   |    |      |
|---------|----|---|----|------|
| 1.1.1.  | B. | Coronary artery   | ✓✓ | (2)  |
| 1.1.2.  | A. | A The pulmonary circuit pumps blood from the right side of the heart to the lungs | ✓✓ | (2)  |
| 1.1.3.  | D. | feed on dead organic matter.  | ✓✓ | (2)  |
| 1.1.4.  | C. | Producers → herbivores → secondary consumers                                      | ✓✓ | (2)  |
| 1.1.5.  | A/ | Geosphere   | ✓✓ | (2)  |
|         | B  | Lithosphere.  |    |      |
| 1.1.6.  | C. | xerophytes.   | ✓✓ | (2)  |
| 1.1.7.  | D. | transpiration.  | ✓✓ | (2)  |
| 1.1.8.  | B. | 8000 kJ/m <sup>2</sup>  | ✓✓ | (2)  |
| 1.1.9.  | B. | The sun.  | ✓✓ | (2)  |
| 1.1.10. | C. |   | ✓✓ | (2)  |
|         |    |   | ✓✓ | (20) |

#### 1.2.

- |         |                     |   |
|---------|---------------------|---|
| 1.2.1.  | Calcium Carbonate   | ✓ |
| 1.2.2.  | Closed circulatory. | ✓ |
| 1.2.3.  | pH.                 | ✓ |
| 1.2.4.  | Oxygen.             | ✓ |
| 1.2.5.  | Invasive species.   | ✓ |
| 1.2.6.  | Relative dating.    | ✓ |
| 1.2.7.  | Hibernation.        | ✓ |
| 1.2.8.  | Global Warming      | ✓ |
| 1.2.9.  | Deforestation.      | ✓ |
| 1.2.10. | Continent.          | ✓ |

[10 x 1 = 10]

#### 1.3.

- |        |        |    |
|--------|--------|----|
| 1.3.1. | None   | ✓✓ |
| 1.3.2. | None   | ✓✓ |
| 1.3.3. | A Only | ✓✓ |
| 1.3.4. | None   | ✓✓ |
| 1.3.5. | None   | ✓✓ |

[5 x 2 = 10]

- 1.4.
  - 1.4.1. Monera ✓ (1)
  - 1.4.2. Plantae ✓ (1)
  - 1.4.3. Prokaryote ✓ (1)
  - 1.4.4. Eukaryote ✓ (1)
  - 1.4.5. Eukaryote ✓ (1)
  - 1.4.6. Unicellular ✓ (1)
  - 1.4.7. Multicellular ✓ (1)
  - 1.4.8. Saprophytic ✓ (1)
  - 1.4.9. Autotrophic ✓ (1)
  - 1.4.10. Paramecium caudatum (MUST be underlined separately) ✓ (1)
- [10 x 1 = 10]

**TOTAL SECTION A: [50]**

## Section B

### Question 2

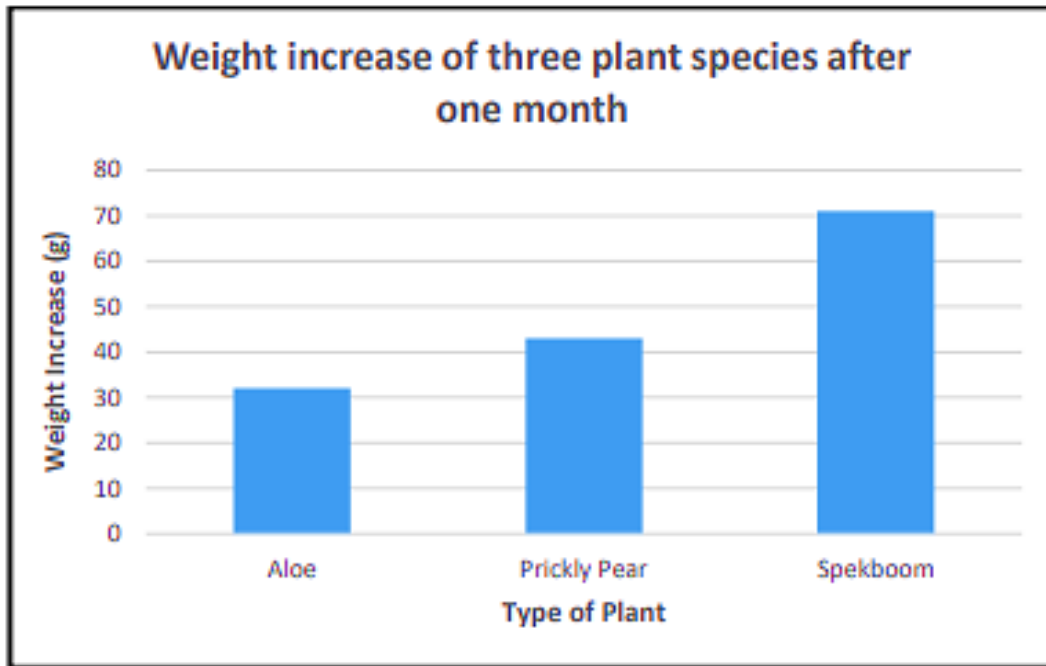
2.1.

2.1.1. *Type of plant ✓*

(1)

2.1.2.

(6)



<i>Mark Allocation:</i>		
<i>Type of Graph (T).</i>		1 Mark
<i>Caption (C) Both variables must be included.</i>		1 Mark
<i>X and Y axis labels and Y axis unit (L).</i>		1 Mark
<i>X and Y axis scales and bars same width (S).</i>		1 Mark
Plotting of points (P)	<i>No bars plotted correctly.</i>	0 Marks/ or
	<i>1 – 2 bars plotted correctly.</i>	1 Mark / or
	<i>All bars plotted correctly.</i>	2 Marks

2.1.3. *So that they can know what the increase in weight is at the end ✓* (1)

2.1.4. *Mark first TWO only (Any 2)* (2)

- *They chose plants of the same height ✓*
- *They put the plants in equal sized pots ✓*
- *All plants had the same type of soil ✓*
- *All plants had the same amount of soil ✓*
- *All plants were in the same location ✓*
- *All plants received the same amount of water ✓*

- 2.1.5.
  - Increase the sample size ✓
  - Repeat the experiment ✓ (Any 1) (1)
- 2.1.6.  $71 \div 800 \times 100 \checkmark = 8,88\% \checkmark$  (2)
- 2.1.7.
  - When plants absorb CO<sub>2</sub> out of the atmosphere they use it to create organic compounds ✓ / carbohydrates which they use to grow ✓
  - The more they grow the more they gain weight ✓ (Any 2) (2)

[15]

- 2.2. (12)
- 2.2.1.
  1. Nitrogen-fixing bacteria ✓
  2. Symbiotic bacteria ✓
  3. Plant protein ✓
  4. Animal protein ✓
  5. Urea ✓
  6. Ammonification ✓
  7. Nitrate bacteria ✓
  8. Nitrates ✓
  9. Nitrate bacteria ✓
  10. Denitrification ✓
  11. Electrical fixation ✓
  12. Absorbed by plants ✓
- 2.2.2. The process by which nitrogen moves between stages ✓ and converts into various chemical forms that are essential for life. ✓ (2)
- 2.2.3. Living organisms need nitrogen to make protein ✓✓ (2)
- 2.2.4. Nitrate salts ✓ and ammonium salt ✓ (2)
- 2.2.5. They absorbed nitrogen ✓ from the food they eat ✓ (2)

[20]

2.3.

2.3.1.

*Light ✓*

(1)

2.3.2.

- *The tilt of the Earth's axis causes one side of the planet to face towards the sun ✓ while the other side faces away from the sun ✓ causing a change in temperature. ✓*
- *The side that faces towards the sun receives more light ✓ and experiences summer, ✓ while the side that faces away receives less light and experiences winter ✓ (Any 3)*

(3)

2.3.3.

a. *Photoperiod ✓*

(1)

b. *Seasonal movement ✓ of animals from one place to another in response to climatic conditions ✓*

(2)

c. • *To avoid cold conditions ✓*

(1)

• *To find more food ✓*

• *To find more water ✓*

**[8]**

- 2.4.
- 2.4.1. • *The sudden death of a large number of species✓ in short time.* (1)
- 2.4.2. • *Accept answer from 55 - 66 million years ago✓/mya* (1)
- 2.4.3. • *Permian✓ extinction* (1)
- 2.4.4. • *Many genera were wiped out completely✓ during the extinction so, their niches were left open✓ /less predators. These niches were rapidly taken over by other genera✓ /species, who diversified and formed new genera✓ /species by natural selection* (4)

[7]

- 2.5.
- 2.5.1. • *Gondwanaland ✓* (1)
- 2.5.2. • *Biogeography ✓* (1)
- 2.5.3. • *Flightless birds like the rhea and ostrich may have developed from a common ancestor ✓ that lived on the same continent✓ /Gondwanaland Both birds became separated ✓ when South America and Africa broke apart ✓ due to continental drift ✓* (4)
- 2.5.4. • *Looking at the continents through time we see that the arctic was never near the Antarctic ✓ Since they are both adapted to cold ✓ they were both unable to cross ✓ the temperate / tropical / warm areas ✓ that separated them ✓ And so they remained separated ✓* (4)

[10]

### Question 3

- 3.1.
- 3.1.1.      • A – Pulmonary Artery ✓ (3)
- B – Pulmonary Vein ✓
- D – Mitral/ Bicuspid/ Atrioventricular Valve ✓
- 3.1.2.      D ✓✓ (2)
- 3.1.3.      Inferior vena cava ✓ (1)
- 3.1.4.      a) A – deoxygenated ✓ (2)
- b) E – oxygenated ✓

**[8]**

- 3.2.
- 3.2.1.      A build-up of cholesterol/ plague in the arteries ✓✓ (2)
- 3.2.2.      mechanically props open a blocked artery to restore and (2)
- maintain proper blood flow. ✓✓

Or

- 3.2.3.      It helps prevent the artery from collapsing or narrowing again (3)
- after a procedure called angioplasty. ✓✓
- Improved diet ✓
- More / regular exercise ✓
- Medication ✓

3.2.4. 1 ✓ per differences + 1 for the table ✓ (3)

Feature	Stroke	Heart Attack
Affected Organ	The brain.	The heart
Underlying Cause	A blood clot blocks an artery in the brain (ischemic stroke), or a blood vessel in the brain bursts (hemorrhagic stroke).	A blood clot blocks a coronary artery, cutting off blood flow to the heart muscle.
Common Symptoms	Sudden facial drooping, arm weakness or numbness (often on one side), difficulty speaking or understanding speech, vision trouble, and severe headache.	Chest pain or pressure, discomfort spreading to the arms (especially the left), jaw, neck, or back, shortness of breath, cold sweats, and nausea.
Symptom Acronym	F.A.S.T. (Face drooping, Arm weakness, Speech difficulty, Time to call emergency services).	There is no widely used acronym for heart attacks, but awareness of chest pain and other symptoms is key.
Rehabilitation	Often includes physical, occupational, and speech therapy to regain lost function.	Involves lifestyle counseling, exercise programs, and medication management to strengthen the heart and prevent future attacks.

[10]

3.3. (3)

3.3.1. A – Atrial systole ✓ (3)

B – Ventricular systole ✓

C – General diastole ✓

3.3.2. (4)

- Blood flows into the right and left atrium. ✓

- The two atria contract ✓ at the same time.

- The tricuspid ✓ and bicuspid valves open.

- Blood flows into the two ventricles ✓

3.3.3. Sino-atrial node / SA node ✓ (1)

3.3.4. 0,8 sec ✓ (1)

3.3.5. (3)

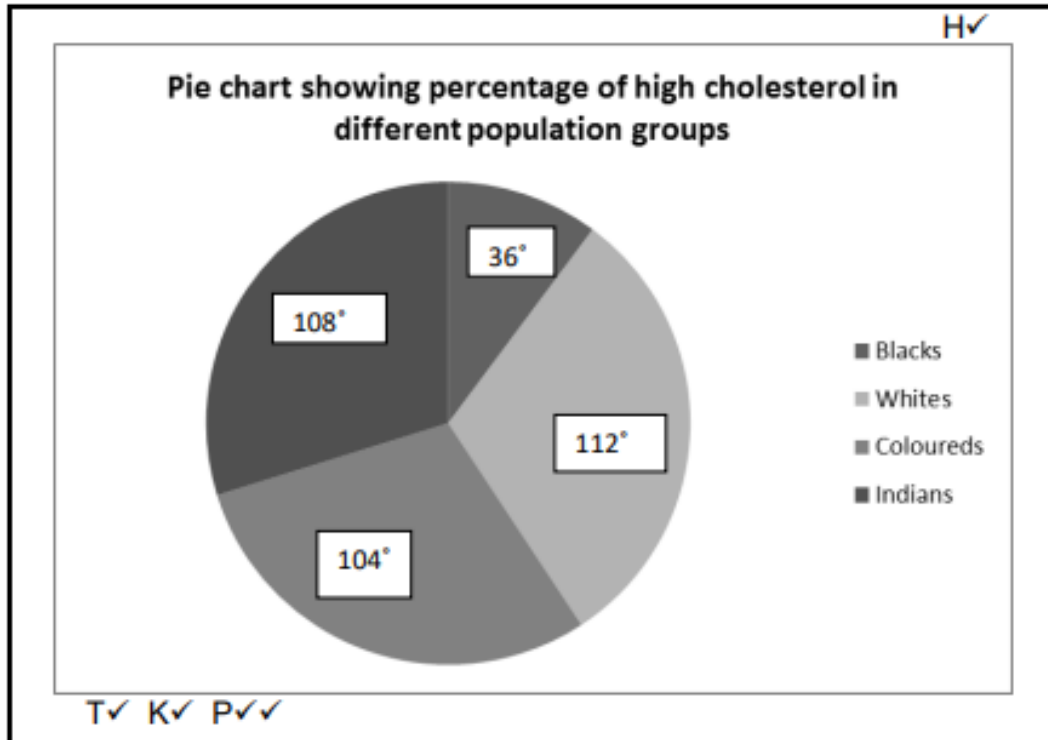
- Receptor cells in the carotid arteries pick up/detect the increased carbon dioxide levels. ✓

- This message is sent to the medulla oblongata. ✓

- (Sympathetic) nerves from the medulla carry the message to the pace maker / SA node of the heart. ✓ causing it to beat faster.

3.4.  
3.4.1.

(9)



Blacks:  $28/276 \times 360^\circ = 36^\circ \checkmark$   
 Whites:  $85/276 \times 360^\circ = 112^\circ \checkmark$   
 Coloureds:  $81/276 \times 360^\circ = 104^\circ \checkmark$   
 Indians:  $82/276 \times 360^\circ = 108^\circ \checkmark$

Criteria	Mark Allocation	
Calculations to determine proportion (C).	4	
Suitable heading (H).	1	
Correct type (T) of Graph.	1	
Key/ Labels (K) to indicate proportions.	1	
Proportions (P) correctly.	1 mark =	One to three proportions correctly constructed / or
	2 marks =	All four proportions correctly constructed

3.4.2. White South Africans ✓

(1)  
[22]

**TOTAL SECTION B: [100]**

**TOTAL: 150**