BERGVLIET HIGH SCHOOL

GEOGRAPHY
PAPER 2

GRADE 10 FINAL EXAMINATION

20 NOVEMBER 2025

MARKS: 150	TIME: 3 HOURS
EXAMINER:	MR B. JOHNS
MODERATOR:	MRS V. SINGARUM

This question paper consists of 14 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS:

   SECTION A: QUESTION 1: Population Geography (60)

   QUESTION 2: Water Resources (60)

   SECTION B: QUESTION 3: Geographical Skills and Techniques (30)

2. Answer all THREE questions.
3. ALL diagrams are included in the QUESTION PAPER.
4. Leave a line between subsections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number your answers correctly according to the numbering system used in this question paper.
7. Do NOT write in the margins of the answer book.
8. Draw fully labelled diagrams when instructed to do so.
9. Answer in FULL SENTENCES, except when asked to state, name, identify or list.
10. The unit of measurement MUST be given in the final answer, where applicable, for example 1 020 hPa, 14 °C and 45 m.
11. You may use a non-programmable calculator.
12. You may use a magnifying glass.
13. Write neatly and legibly.

SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

14. A 1 : 50 000 TOPOGRAPHIC MAP 2726DC ODENDAALSRUS and a 1 : 10 000 orthophoto map extract from 2726DC 14 ODENDAALSRUS are provided.
15. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.
16. Show ALL calculations where applicable. Marks will be allocated for this.
17. You must hand in the topographic and orthophoto map to the invigilator at the end of this examination session.

SECTION A POPULATION GEOGRAPHY AND WATER RESOURCES

QUESTION 1 POPULATION GEOGRAPHY

1.1 Match the terms in COLUMN B with the correct definition in COLUMN A. Write only the letter (A to I) next to the question number (1.1.1 to 1.1.8), for example 1.1.9 J

COLUMN A		COLUMN B	
1.1.1	The group of people living in a particular area.	**A**	Literacy Rate
1.1.2	The number of people per km².	**B**	Mortality Rate
1.1.3	The way in which people are spread out across an area.	**C**	Population
1.1.4	The average number of years a person is likely to live for.	**D**	Population Distribution
1.1.5	The percentage of a population above 15 years that can read and write.	**E**	Infant Mortality Rate
1.1.6	The number of live births per 1 000 people in a country per year.	**F**	Population Density
1.1.7	The number of deaths per 1 000 people in a country per year.	**G**	Fertility Rate
1.1.8	The average number of children a woman in a particular country is likely to have.	**H**	Life Expectancy
		I	Birth Rate

(8 x 1) (8)

1.2 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A to D) next to the question number (1.2.1 to 1.2.7), for example 1.2.8 C.

Read the extract below to answer QUESTIONS 1.2.1 to 1.2.4.

South Africa's mid-year population is estimated to have increased to 63,02 million in 2024, with the female population accounting for 51,0% (32,13 million) of the population, this is according to the report by Statistics South Africa. Gauteng continues to record the largest share of the South African population, with approximately 15,83 million people. KwaZulu-Natal has the second largest population, with an estimated 12,34 million people. With approximately 1,36 million people, Northern Cape remains the province with the smallest share of the South African population. According to the report, 27,5% of the population is aged younger than 15 years and approximately 9,7% is 60 years or older. The proportion of elderly persons aged 60 years and older in South Africa is increasing over time. The life expectancy at birth for 2024 is estimated at 63,6 years for males and 69,2 years for females.

1.2.1 Which South African province has the largest population?

A Western Cape
B Northern Cape
C Kwazulu-Natal
D Gauteng

1.2.2 Which ONE of the following statements is correct?

A There are more elderly people in S.A. than young children.
B The number of young people in S.A. has doubled in 2024.
C There are more young children in S.A. than elderly people.
D The number of elderly people in S.A. has decreased in 2024.

1.2.3 In mid-2024, there were approximately … million males in South Africa.

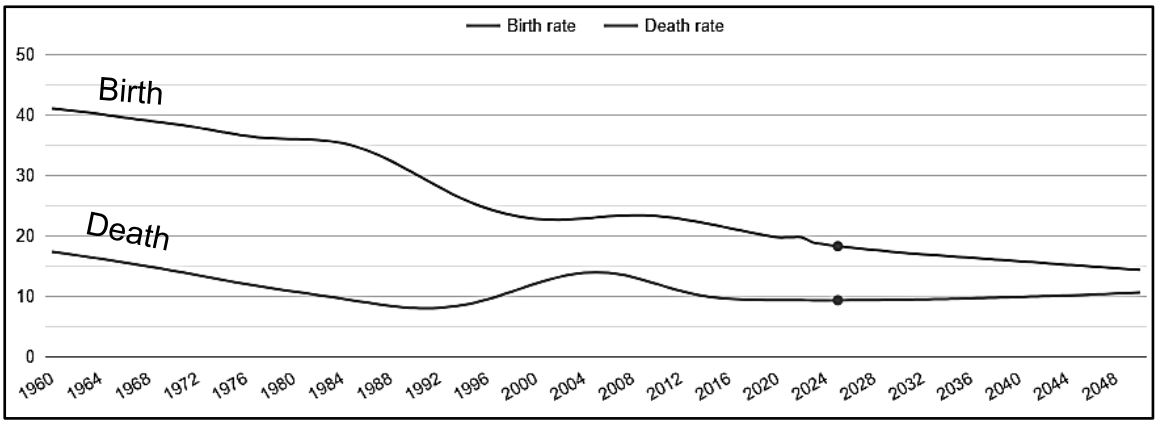
A 63.02
B 30.89
C 32.13
D 61.66

1.2.4 Which statements about South Africa's population are true?

(i) There were more males than females in 2024.
(ii) Females live longer lives than males.
(iii) There were more females than males in 2024.
(iv) Males live longer than females.

A (i) and (iii)
B (i) and (iv)
C (ii) and (iii)
D (ii) and (iv)

Refer to the graph showing birth and death rates in South Africa to answer QUESTIONS 1.2.5 to 1.2.7.



1.2.5 Up until 2025, the birth rate in South Africa showed a … trend, and the death rate in general displayed a … trend.

A decreasing; increasing
B decreasing; decreasing
C increasing; increasing
D increasing; decreasing

1.2.6 Which possible economic reason is responsible for the trend in birth rates in South Africa?

A Employment
B Higher salaries
C Inflation (cost of living)
D Better education

1.2.7 … is a possible reason for the trend in death rates in South Africa.

A Improved access to health care
B Food insecurity
C Increased housing shortages
D Political unrest

(7 x 1) (7)

1.3 The table below shows the countries with the largest populations in the world.

TOP 10 COUNTRIES BY POPULATION (7 OCTOBER 2025)

Rank	Country	Population	Continent
1	India	1 467 354 898	Asia
2	China	1 415 231 829	Asia
3	USA	347 773 752	North America
4	Indonesia	286 323 558	Asia
5	Pakistan	256 290 201	Asia
6	Nigeria	238 845 968	Africa
7		213 031 343	South America
8	Bangladesh	176 261 452	Asia
9	Russia	143 777 320	Asia/Europe
10	Ethiopia	136 402 677	

1.3.1 Based on the statistics, which continent has the greatest number of people? (1 x 1) (1)

1.3.2 Name the country ranked number 7.
[**Hint**: It is the largest country by area in South America]. (1 x 1) (1)

1.3.3 State the name of the continent on which Ethiopia is found. (1 x 1) (1)

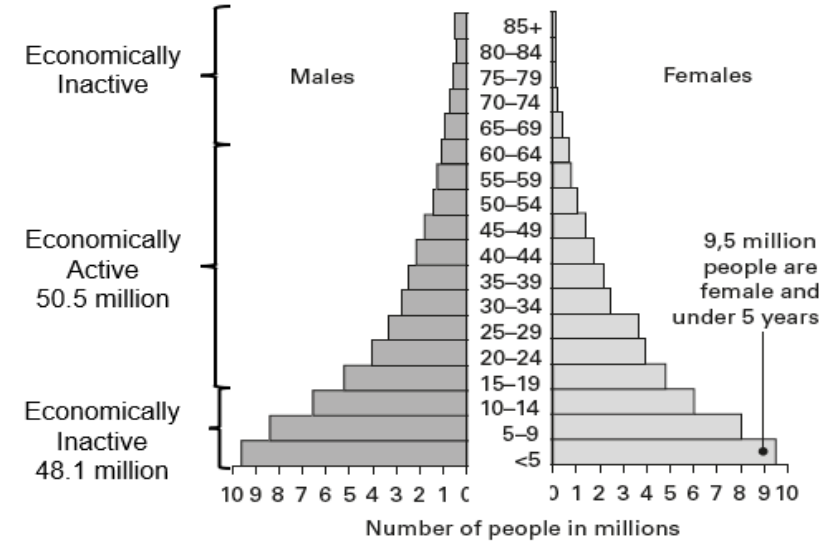
1.3.4 Describe the negative consequences of a large population on the natural environment in Nigeria. (2 x 2) (4)

1.3.5 Discuss TWO possible reasons for high birth rates and large population in India. (2 x 2) (4)

1.3.6 Suggest TWO ways in which India can reduce its birth rate. (2 x 2) (4)

1.4 Study the population pyramid below.

POPULATION PYRAMID



AGE	65-69	70-74	75-79	80-84	85+
MALE	1	0.8	0.7	0.5	0.6
FEMALE	0.5	0.2	0.1	0.1	0.1

1.4.1 What information does a population pyramid show? (2 x 1) (2)

1.4.2 How many females (in millions) are aged 5 to 9 years? (1x 1) (1)

1.4.3 Derive evidence from the population pyramid that the birth rate is high. (1 x 2) (2)

1.4.4 Distinguish between the terms *economically active* and *economically inactive.* (2 x 2) (4)

1.4.5 Calculate the number of economically inactive people (in millions) who are 65 years and older. (1 x 1) (1)

1.4.6 Use the formula below to calculate the dependency ratio:

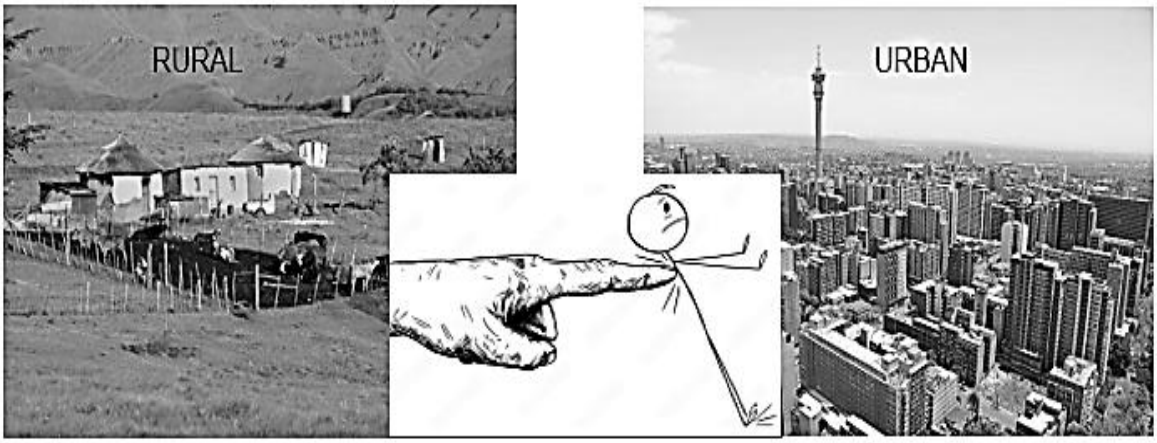
$$Dependency\ Ratio = \frac{Total\ Number\ of\ Economically\ Inactive}{Total\ Number\ of\ Economically\ Active} \text{ x } 100$$

(3 x 1) (3)

1.4.7 Interpret and analyse the answer to QUESTION 1.4.6. (1 x 2) (2)

1.5 The illustration shows a common type of population movement in South Africa.

TYPE OF POPULATION MOVEMENT IN SOUTH AFRICA



1.5.1 Identify the type of population movement in the illustration. (1 x 1) (1)

1.5.2 What evidence suggests that the movement in the illustration is forced? (1 x 2) (2)

1.5.3 Discuss economic reasons why an urban area would be seen as a better alternative for life than a rural area. (2 x 2) (4)

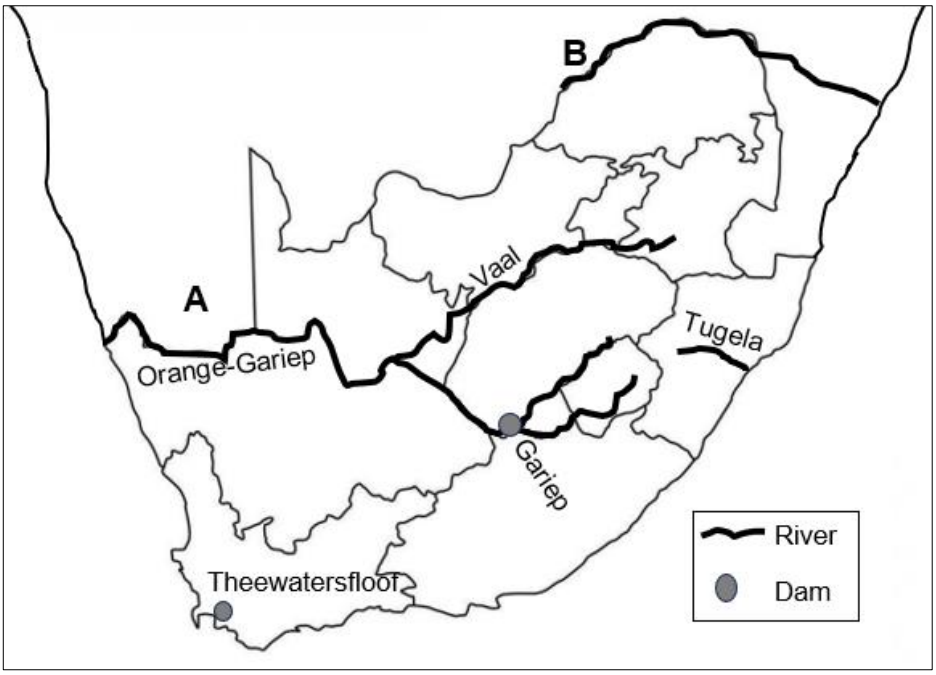
1.5.4 In a paragraph of approximately EIGHT lines suggest social improvements needed in rural areas that would encourage people to stay. (4 x 2) (8)

[60]

QUESTION 2 WATER RESOURCES

2.1 Study the map and then answer the question that follow.

WATER SOURCES IN SOUTH AFRICA



2.1.1 List TWO sources of water for South Africa from the map. (2 x 1) (2)

2.1.2 Identify the country marked **A** that is separated from South Africa by the Orange-Gariep. (1 x 1) (1)

2.1.3 Name the ocean into which the Orange-Gariep River flows. (1 x 1) (1)

In the following questions, choose the correct answer from inside each bracket to make the statements true. Write only the answer next to the question number.

2.1.4 The (Gariep / Theewaterskloof) Dam is South Africa's largest dam.

2.1.5 The (Tugela / Vaal) River flows through Kwazulu-Natal.

2.1.6 The Theewaterskloof Dam supplies water to the (Northern / Western) Cape.

2.1.7 River **B** is called the (Limpopo / Mpumalanga) River. (4 x 1) (4)

2.2 Choose the term in COLUMN B that completes the statement in COLUMN A. Write only the letter (**Y** or **Z**) next to the question number (2.2.1 to 2.2.7), for example 2.2.8 Y

COLUMN A		COLUMN B	
2.2.1	The primary source of water in South Africa is ...	**Y**	groundwater
		Z	rainfall
2.2.2	In South Africa, the rainfall decreases from …	**Y**	east to west
		Z	west to east
2.2.3	The … province receives the least amount of rainfall in South Africa.	**Y**	Kwazulu-Natal
		Z	Northern Cape
2.2.4	Water … refers to a lack of sufficient water to meet demand.	**Y**	harvesting
		Z	scarcity
2.2.5	Water … involves removing pollutants from water to make it safe for use.	**Y**	contamination
		Z	treatment
2.2.6	The process of removing salt from seawater is called ...	**Y**	desalination
		Z	water conservation
2.2.7	… water is domestic wastewater that can be recycled for non-potable uses like irrigation.	**Y**	Green
		Z	Grey

(7 x 1) (7)

2.3 Read the extract below.

THE CURRENT WATER SHORTAGE IN SOUTH AFRICA: CAUSES, IMPACTS AND SOLUTIONS

South Africa is facing a severe water shortage crisis. This shortage has significant implications for its population, agriculture and industry. One of the primary causes of the current water shortage in South Africa is climate change. Increased temperatures and altered precipitation patterns have led to prolonged droughts and reduced water availability. An increasing population, inadequate water infrastructure and pollution have added to the water shortages. The agricultural and industrial sectors are heavily dependent on water, so shortages with have significant economic implications.

Promoting water conservation, modernising water infrastructure and encouraging sustainable agricultural practices are important to manage the water shortages. Stricter pollution control and using alternative water sources are two solutions to the problem.

2.3.1 Who is responsible for making water available for use in South Africa? (1 x 1) (1)

2.3.2 Name TWO ways (according to the extract) in which climate change has contributed to the water shortages in South Africa. (2 x 1) (2)

2.3.3 Discuss the negative economic impact of water shortages on agriculture. (1 x 2) (2)

2.3.4 Describe how industrial activity contributes to water pollution. (2 x 2) (4)

2.3.5 Promoting water conservation is important to manage water shortages. Recommend THREE ways in which households can save water. (3 x 2) (6)

2.4 Read the extract on water transfer and hydro-electric power.

WATER TRANSFER AND HYDRO-GENERATION RESUMES



Katse Dam



Muela Hydropower Station

On Saturday 24th May 2025, Muela Hydropower station unit 1 & 2 were successfully synchronised back to national load. Water transfer into South Africa also commenced after the completion of major maintenance works of corrosion protection and tunnel rehabilitation which started in October 2024. The return marks not only a major boost in the national energy stability through reduction of imported electricity, but also sustainable water supply into Gauteng province. Unit 2 currently generates at full capacity, while unit 3 have not yet reached its installed capacity due to technical faults. Unit1 is expected to be commissioned soon. Upon completion of maintenance work and closing of all bulkheads, the team from Katse and Muela had to gradually fill the delivery tunnel and dam levels before water transfer commenced.

2.4.1 Discuss the aim of an inter-basin water transfer scheme. (3 x 1) (3)

2.4.2 Name South Africa's neighbouring country in which the Katse Dam is located. (1 x 1) (1)

2.4.3 State the name of the power station responsible for generating hydroelectricity. (1 x 1) (1)

2.4.4 Describe the role that each of the following play in an inter-basin water transfer scheme:

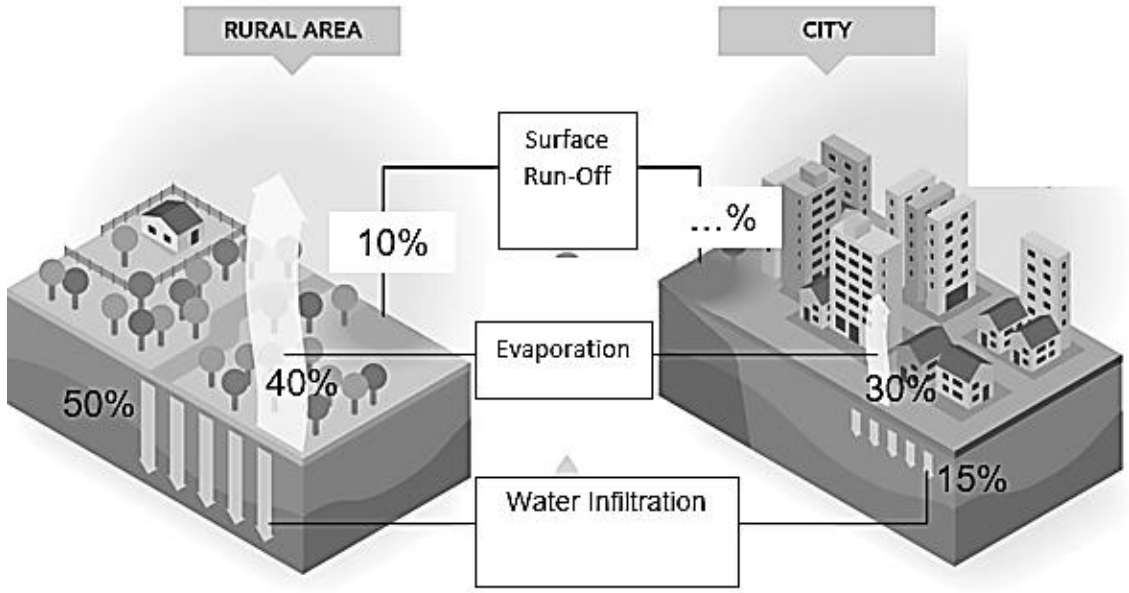
a) Delivery tunnels. (1 x 2) (2)

b) Dams (1 x 2) (2)

2.4.5 Evaluate the importance of the water supplied by the transfer scheme for social and economic development in Gauteng. (3 x 2) (6)

2.5 Study the illustration showing what happens to water in rural and urban areas.

WATER IN RURAL AND URBAN AREAS



2.5.1 Calculate the percentage of water that remains on the earth as surface run-off in a city. (1 x 1) (1)

2.5.2 What happens to 40% of the water in a rural area after it rains? (1 x 1) (1)

2.5.3 Identify the area (rural or urban) where more water soaks into the earth's surface. (1 x 1) (1)

Flooding is more likely to happen in an urban area (city) than in a rural area.

2.5.4 Define the concept of *flooding*. (1 x 2) (2)

2.5.5 Explain why flooding is more likely to occur in an urban area. (1 x 2) (2)

2.5.6 In a paragraph of approximately EIGHT lines, discuss the social impact of flooding in an urban area, and sustainable ways in which the effects of flooding can be reduced. (4 x 2) (8)

[60]

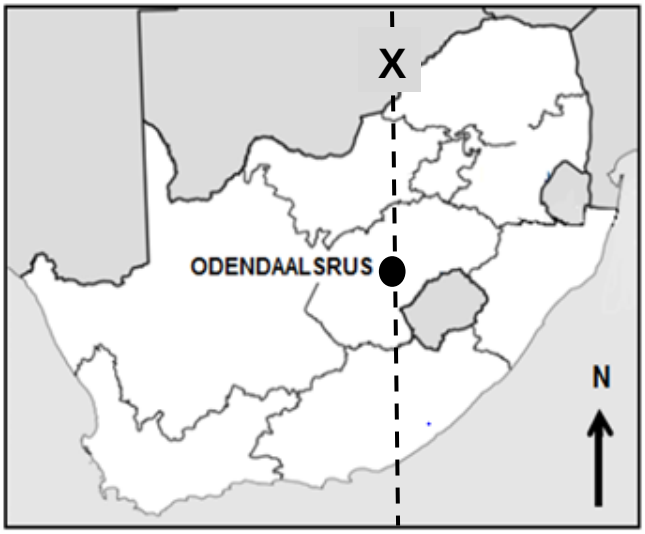
TOTAL SECTION A: 120

SECTION B

QUESTION 3 GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 MAP SKILLS AND CALCULATIONS

3.1.1 Refer to the map title, 2726DC, and the map below.



The line marked **X** represents …

A 27° south latitude.
B 26° south latitude.
C 27° east longitude.
D 26° east longitude. (1 x 1) (1)

3.1.2 Odendaalsrus is in the … province (refer to map in QUESTION 3.1.1).

A North-West
B Free State
C Gauteng
D Limpopo (1 x 1) (1)

3.1.3 The scale of the topographical map is ... times smaller than that of an orthophoto map

A 0.5
B 5
C 10 000
D 50 000 (1 x 1) (1)

3.1.4 Complete the coordinates (grid reference) for spot height 1357 (**G**) in block **C5** of the topographical map.

a) 27° ___’ 28” S

b) 26° 44’ ___” E (2 x 1) (2)

Refer to spot height 1336 (block **D3**) and spot height 1339 (block **E5**) on the orthophoto map.

3.1.5 Determine the height difference between the spot heights. (1 x 1) (1)

3.1.6 Calculate the distance (in m) between the two spot heights. (2 x 1) (2)

3.1.7 Use the formula below to calculate the average gradient between the spot heights.

Formula: $$\boldsymbol{Average\ Gradient} = \frac{\boldsymbol{Vertical\ Interval\ (VI)}}{\boldsymbol{Horizontal\ Equivalent\ (HE)}}$$

(2 x 1) (2)

3.2 MAP INTERPRETATION

3.2.1 Which block (**A4** or **B4**) on the orthophoto map has a higher population density? (1 x 1) (1)

3.2.2 Provide ONE reason for your answer to QUESTION 3.2.1. (1 x 2) (2)

3.2.3 Discuss reasons why people chose to start a settlement and live at Thelma (**A3** and **A4** on the topographical map). (2 x 2) (4)

A primary economic activity is practiced in block **C4** of the topographical map. The aerial photograph below additionally shows the primary activity in **C4**.



3.2.4 Identify the primary economic activity in **C4**. (1 x 1) (1)

3.2.5 List TWO sources of water (in block **C4**) that supports the primary activity identified in QUESTION 3.2.4. (2 x 1) (2)

3.2.6 Describe ONE negative environmental impact the primary activity may have on the water sources listed in QUESTION 3.2.5. (1 x 2) (2)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

Study the collection of images below.

A	B
	
C	**D**
	

3.3.1 Which image (**A** or **B**) shows hardware, a component of GIS? (1 x 1) (1)

3.3.2 Identify the image that demonstrates the process of remote sensing. (1 x 1) (1)

3.3.3 Based on your answer to QUESTION 3.3.2, name the remote sensing tool shown in the image. (1 x 1) (1)

3.3.4 Which image (**C** or **D**) has a higher resolution? (1 x 1) (1)

3.3.5 Provide a reason for your choice of image in QUESTION 3.3.4. (1 x 2) (2)

3.3.6 What gives the image (chosen in QUESTION 3.3.4) a higher resolution? (1 x 2) (2)

[30]

TOTAL SECTION B: 30

GRAND TOTAL: 150