KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY

JUNE EXAMINATION

2025

MARKS: 150

TIME: 3 hours

N.B. This question paper consists of 17 pages.

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INSTRUCTIONS

1. The paper consists of TWO sections.

   SECTION A

   QUESTION 1: CLIMATE AND WEATHER AND GEOMORPHOLOGY

   QUESTION 2: RURAL AND URBAN SETTLEMENT

   SECTION B

   QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

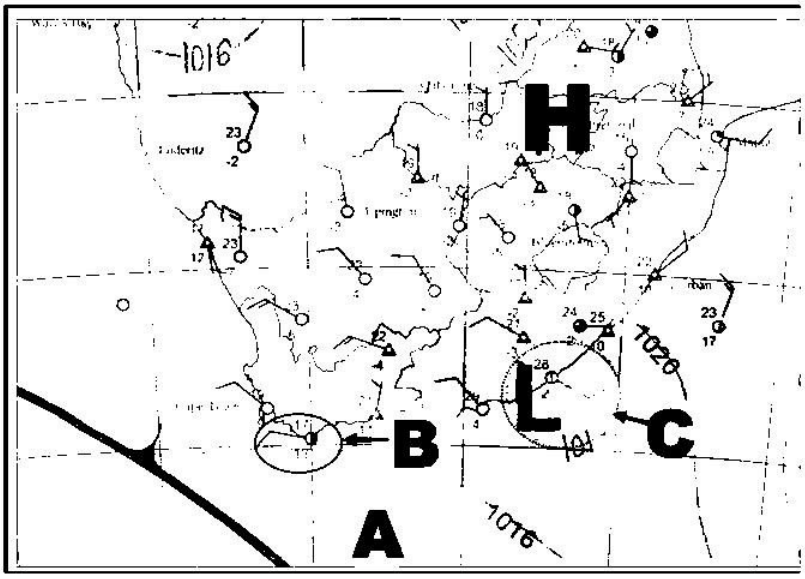
2. Answer **ALL** questions.

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY
RURAL AND URBAN SETTLEMENT

QUESTION 1: CLIMATE AND WEATHER

1.1 The questions below refer to the synoptic weather map. Various options are provided as possible answers to the questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 D.



[Adapted from www.weathersa.co.za]

1.1.1 The isobaric reading at line **A** is … hPa.

A 1016
B 1018
C 1014
D 1012

1.1.2 The air temperature at weather station **B** is … ºC.

A 17
B 13
C -17
D -13

1.1.3 Which pressure cell is influencing the weather over Bloemfontein, as indicated by the isobars?

A Coastal low-pressure cell
B Kalahari High-pressure cell
C Cut-off low-pressure cell
D Thermal low pressure cell

1.1.4 The impact of the cold front in Cape Town for the next 24 hours would be…

A stable conditions with high temperatures
B rainfall and windy conditions as the cold front passes over
C warm and sunny weather caused by the warm front
D dry weather with clear skies

1.1.5 The low-pressure cell at **C** is known as a …low

A thermal
B continental
C coastal
D cut-off

1.1.6 Which of the following conditions is associated with the low-pressure cell labelled **C**?

A hot, dry winds moving onshore
B moist air moving from the ocean, bringing possible rainfall
C stable atmospheric conditions with minimal cloud cover
D warm, descending air preventing cloud formation

1.1.7 The cloud cover at the weather station labelled **B** is…

A $\frac{4}{8}$

B $\frac{1}{8}$

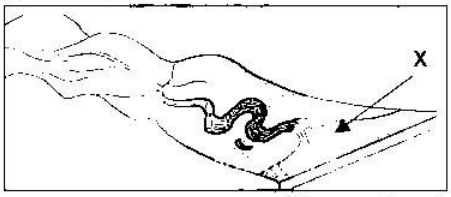
C $\frac{2}{8}$

D $\frac{6}{8}$

(7x 1) (7)

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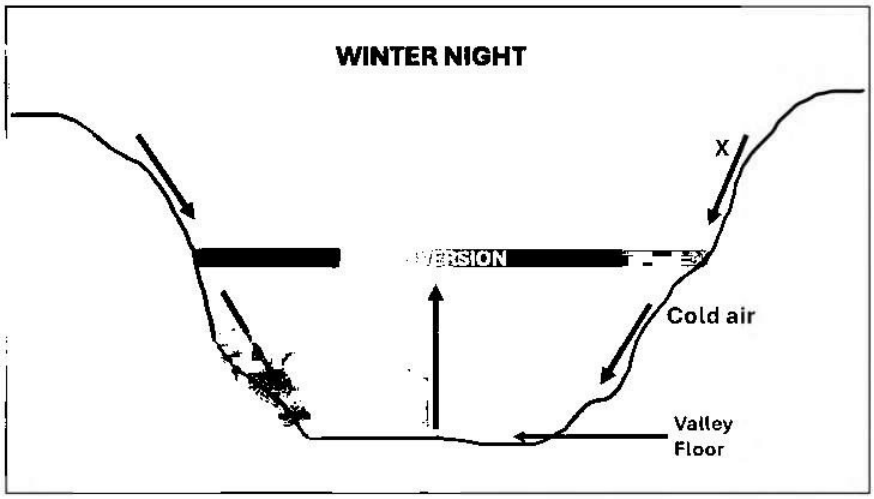
1.2 The questions below refer to drainage systems in South Africa. Complete the statements in COLUMN A with the options in COLUMN B. Write only Y or Z next to the question numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, e.g. 1.2.9 Y.

	Column A	Column B
1.2.1	The high ground around a drainage basin that separates one drainage basin from another is called the …	**Y** interfluve **Z** watershed
1.2.2	The … is the point where two rivers join.	**Y** confluence **Z** tributaries
1.2.3	Label **X** in the diagram below refers to the … of the river.  [Source: Examiner's own sketch]	**Y** mouth **Z** source
1.2.4	Water flowing over the land due to heavy rainfall is known as …	**Y** base flow **Z** surface runoff
1.2.5	Water found beneath the Earth's surface is known as …	**Y** ground water **Z** channel flow
1.2.6	The … is the upper level of the saturated rock beneath Earth's surface.	**Y** ground water **Z** water table
1.2.7	The…river forms when silt is deposited on the river bed building up islands of alluvium.	**Y** braided **Z** ungraded
1.2.8	The…flow is generally associated with a smooth concave riverbed where water moves slowly in layers.	**Y** laminar **Z** turbulent

(8 x 1) (8)

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1.3 Refer to the figure below which shows a valley climate.



[Source: Examiner's own image]

1.3.1 Define the concept *temperature inversion.* (1 x 2) (2)

1.3.2 Is the wind at **X** an anabatic or a katabatic wind? (1 x 1) (1)

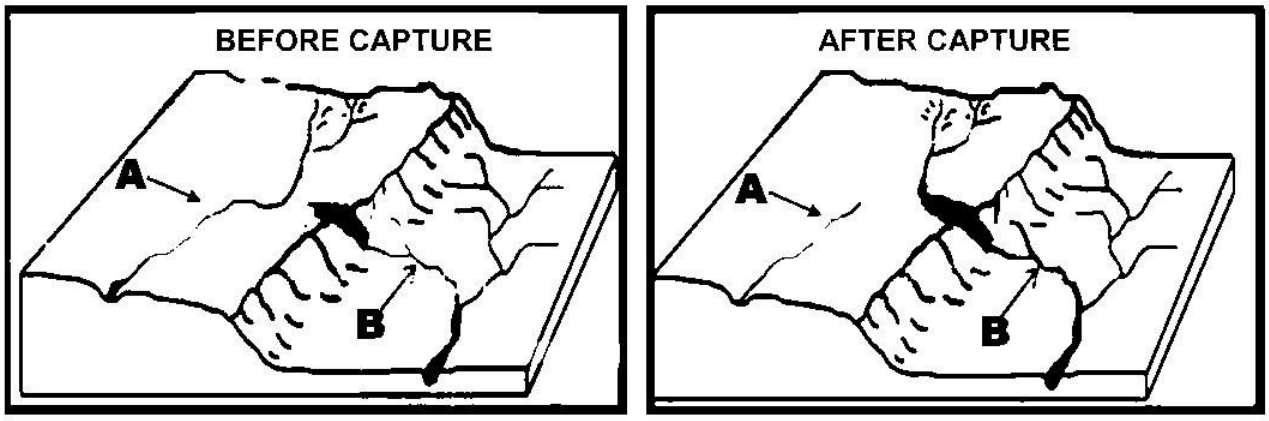
1.3.3 Explain TWO conditions that contribute to the formation of temperature inversion in a valley during winter night. (2 x 2) (4)

1.3.4 Suggest how temperature influences the formation of frost pockets on the valley floor in winter. (1 x 2) (2)

1.3.5 Evaluate the negative economic impact of frost pockets on farmers on the valley floor in winter? (3 x 2) (6)

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1.4 Refer to the sketches below showing river capture.



[Source: Adapted from NSC November 2022 Exams]

1.4.1 Define the concept *river capture*. (1 x 2) (2)

1.4.2 Which river (**A** or **B**) would be considered as the captor stream. (1 x 1) (1)

1.4.3 Explain how the process of river capture causes the watershed to change its position. (2 x 2) (4)

1.4.4 In a paragraph of approximately EIGHT lines, discuss the impact of river capture on the farming community along river **A** after capture. (4 x 2) (8)

1.5 The extract below is on river management.

> For years, the residents of Heron Street in Kharwastan have had to endure the gut-wrenching stench of the Umhlatuzana River, which has accumulated pollution and chemical waste- allegedly from factories surrounding the stream.
>
> Mahommed Reshard Ismail, a resident of the area for the past 38 years, claims that the waste from factories and informal settlements have been polluting the Umhlatuzana River, creating a chronic health hazard.

[Source: https://risingsunnewspapers.co.za/184413/chemical-and-feculent-waste-flow-into-umhlatuzana-river/]

1.5.1 What is *river management*? (1 x 2) (2)

1.5.2 Identify the type of pollution affecting the Umhlatuzana River in the extract. (1 x 1) (1)

1.5.3 Discuss how the pollution mentioned in QUESTION 1.5.2 might impact both the environment and the health of the local community? (3 x 2) (6)

1.5.4 Suggest THREE measures that can be put in place by the local municipality of Umhlatuzana River to manage the river system at risk. (3 x 2) (6)

[60]

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QUESTION 2: RURAL AND URBAN SETTLEMENTS

2.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A – D) next to the question numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, e.g. 2.1.9 B

2.1.1 The location of the settlement in relation to the surrounding features is known as…

A site.

B proximity.

C location.

D situation.

2.1.2 Which of the following is NOT a site factor for a rural settlement?

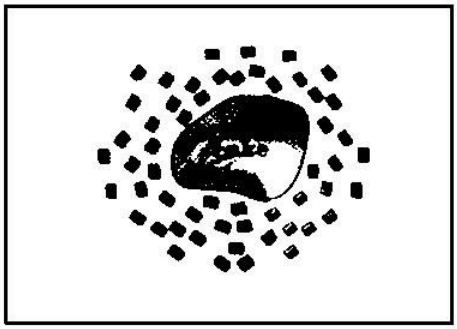
A dense population.

B water supply.

C flat land.

D fertile soil.

Refer to the figure below on the shape of the settlement to answer QUESTIONS 2.1.3 and 2.1.4



2.1.3 The shape of this settlement is …

A linear.

B isolated.

C circular.

D dispersed.

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2.1.4 This settlement is influenced by access to the…

A roads.

B lake.

C pasture.

D firewood.

2.1.5 The main factor used to classify settlements is the…

A function.

B pattern.

C shape.

D site.

2.1.6 The largest rural settlement is called…

A hamlet.

B town.

C village.

D farmstead.

2.1.7 The movement of people from rural to urban areas is called…

A counter-urbanisation.

B nucleated settlement.

C rural-urban migration.

D rural depopulation.

2.1.8 The social advantages of the nucleated rural settlements are…

(i) initiate own ideas.

(ii) safety.

(iii) easy to share ideas.

(iv) owning small parcels of land.

A (i) and (ii)

B (ii) and (iii)

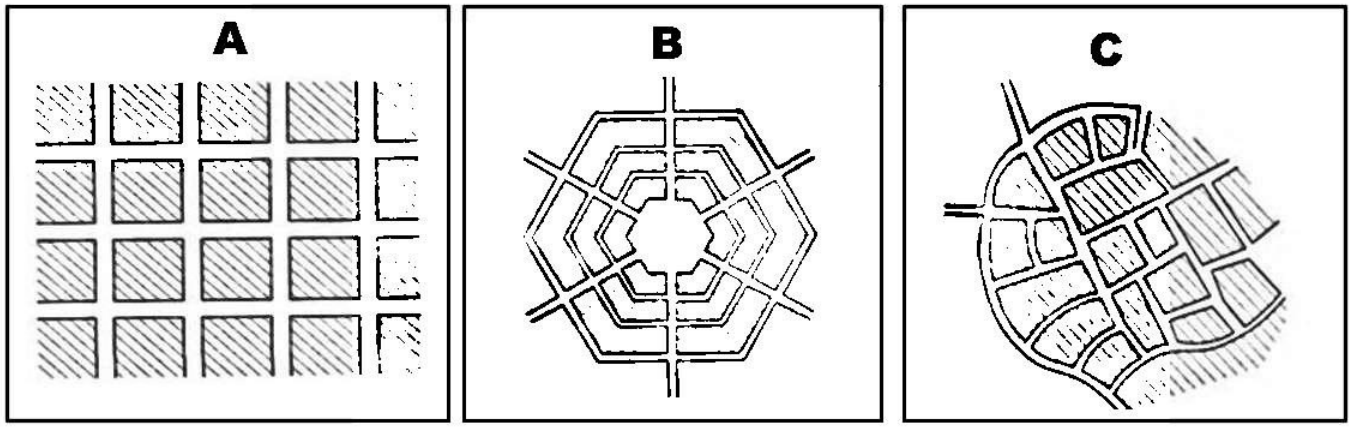
C (ii) and (iv)

D (iii) and (iv)

(8 x 1) (8)

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2.2 The figure below shows street patterns. Match the descriptions with street patterns A, B or C. choose the answer and write only the letter **A, B** or **C** next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 C. You may choose the same letter more than once.



[Source adapted from https://www.graemecollege.co.za/media/1200/gr-12-settlement-geography-part-6-summaries-urban-settlements.pdf]

2.2.1 Associated with the new urban developments.

2.2.2 Many intersections result to traffic congestion.

2.2.3 It suits the uneven topography.

2.2.4 All roads converge on a central point.

2.2.5 It results to the free-flow of traffic.

2.2.6 It is found in the oldest part of urban areas.

2.2.7 Associated with ancient cities with ring roads as a feature.

(7 x 1) (7)

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2.3 Refer to the sources below on land reform.

'Elite capture': how land reform favours the rich and powerful

By Staff Reporter

20 April 2020 | 1:26 pm

Land reform should aim to address poverty and create livelihood opportunities for those at the lower end of the historically disadvantaged spectrum. This isn't happening, according to the Institute for Poverty, Land and Agrarian Studies. Instead, land allocation and access to resources are skewed in favour of well-off beneficiaries.



President Cyril Ramaphosa assents to (approve) Expropriation Bill

23 Jan 2025

President Cyril Ramaphosa has signed into law the Expropriation Bill which repeals the pre-democratic Expropriation Act of 1975 and sets out how organs of State may expropriate land in the public interest for varied reasons.
Section 25 of the Constitution recognises expropriation as an essential mechanism for the state to acquire someone's property for a public purpose or in the public interest, subject to just and equitable compensation being paid.

The Bill repeals the Expropriation Act and provide a common framework in line with the Constitution to guide the processes and procedures for expropriation of property by organs of state.

This law will assist all organs of State - local, provincial and national authorities - to expropriate land in the public interest for varied reasons.

Media enquiries: Vincent Magwenya Spokesperson to the President

Source: Adapted from https://www.gov.za/news/media-statements/president-cyril-ramaphosa-assents-expropriation-bill-23-jan-2025

2.3.1 What is *land reform*? (1 x 2) (2)

2.3.2 According to the extract, what was wrong with the previous land reform act? (1 x 1) (1)

2.3.3 Refer to the extract above and explain how was the old expropriation bill repealed (changed)? (1 x 2) (2)

2.3.4 Why the new expropriation bill faced opposition from the previously advantaged land-owners? (2 x 2) (4)

2.3.5 Discuss factors that caused the previous process of land reform to advance too slowly? (3 x 2) (6)

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2.4 Refer to the photographs below showing urban decay in Johannesburg.



[Source Adapted from https://www.iol.co ...aturday-star/news/look-from-joburg-with-love-acclaimed-dentist-captures-the-essence-of-the-beloved-city-of-gold-64af470d-4d1f-4866-aa4c-b1d5862c5af9]

2.4.1 Define the concept *urban decay*. (1 x 2) (2)

2.4.2 Mention evidence from the photographs indicating that urban decay has taken place. (1 x 1) (1)

2.4.3 Refer to the photographs above and identify possible causes of urban decay. (2 x 2) (4)

2.4.4 Suggest measures that could be implemented by Johannesburg Municipality to renew the city. (2 x 2) (4)

2.4.5 Explain how urban renewal will negatively affect people living in the City of Johannesburg. (2 x 2) (4)

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2.5 Refer to the newspaper article on informal settlements below and answer the questions that follow.

It will take eThekwini over 90 years to fix informal settlements, says metro

9 May 2023 | By Nombulelo Damba-HendrikNews | Durban





It will take the eThekwini Municipality almost a century to deal with the backlog of problems at informal settlements across the metro, given the current fiscal allocations. This is according to the head of communications at the municipality, Lindiwe Khuzwayo.

Families at Foreman Road informal settlement in Durban have been asking the City to electrify their shacks and improve sanitation.

Some shacks are built on wetlands, so the ground is always damp. Residents say they protested in 2018 to demand electricity, among other services. They said the municipality sent a contractor to install electricity, but only a few shacks received formal electricity. Most shacks at Foreman Road still rely on illegal connections.

Source: Adapted from: https://www.dailymaverick.co.za/article/2023-05-09-90-years-thats-how-long-it-will-take-ethekwini-to-fix-informal-settlements-says-metro/

2.5.1 What is an *informal settlement*? (1 x 2) (2)

2.5.2 Quote evidence from the article which suggest that some informal settlement are built on sensitive land. (1 x 1) (1)

2.5.3 Mention at least TWO services that the above community are complaining about. (2 x 1) (2)

2.5.4 How does the building material of informal settlements above increase vulnerability (more risk) to fires? (1 x 2) (2)

2.5.5 In a paragraph of approximately EIGHT lines, suggest measures that can be implemented by local municipality to reduce the challenges associated with the growth of informal settlements. (4 x 2) (8)

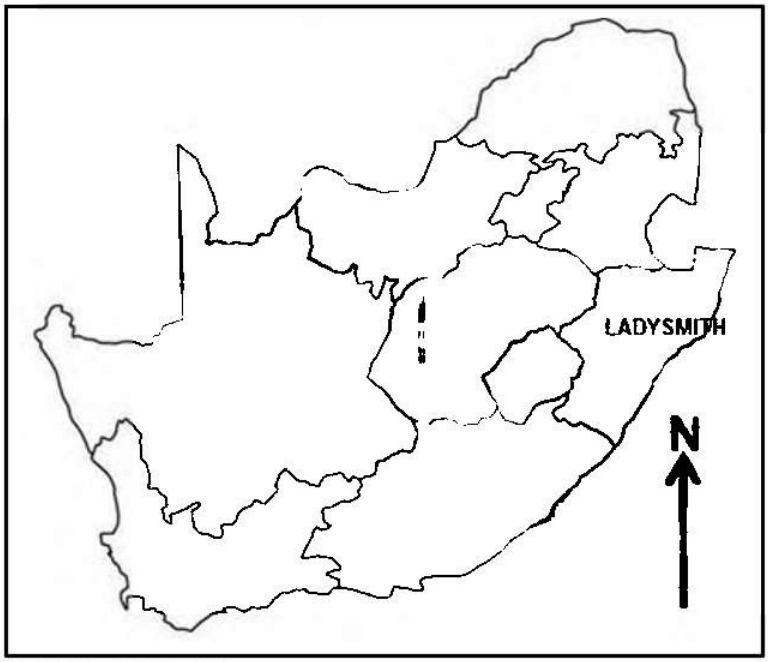
[60]

TOTAL SECTION A: 120

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON LADYSMITH



Coordinates: 28º33'S; 29º46'E

Ladysmith is a city in the Uthukela District of Kwa Zulu-Natal. It is situated along the Klip River. The climate is warm and temperate with the highest rainfall recorded in summer. The average annual temperature is 17,3 ºC. The average annual precipitation is approximately 1 057mm. This climate provides ideal conditions for agricultural raw materials.

[Source Adapted from: https://en.wikipedia.org/wiki/LADYSMITH]

The following English terms and their Afrikaans translations are shown on the topographical map:

ENGLISH	AFRIKAANS
Furrow	Voor
Aerodrome	Vleigveld
Klip River	Kliprivier
Sewage works	Rioolwerke
Weir	Studam

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3.1 MAP SKILLS AND CALCULATIONS

3.1.1 In which province is Ladysmith? (1 x 1) (1)

3.1.2 What is the map code south-east of 2829DB?

2829BC	**2829BD**	**2830AC**
2829DA	**Ladysmith 2829DB**	**2830CA**
2829DC	**2829DD**	**2830CC**

A 2829DC
B 2829DD
C 2830CC
D 2830CA (1 x 1) (1)

3.1.3 The coordinates of the weir at **I** in block **A3** is…

A 28º31'24"S; 29º47'25"E
B 29º47'25"E; 28º31'24"S
C 28º31'24"E; 29º47'25"S
D 29º47'25"S; 28º31'24"E (1 x 1) (1)

3.1.4 Determine the true bearing from trigonometrical station 324 (block **E2**) to trigonometrical station 313 (block **C1**). (1 x 1) (1)

3.1.5 Use the topographical map and the information below to calculate the magnetic declination for the year 2025. (5 x 1) (5)

Difference in years: _____

Mean annual change: _____

Total change: _____

Magnetic declination: _____

_____

3.1.6 What is the purpose of calculating the magnetic declination? (1 x 1) (1)

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3.2 MAP INTERPRETATION

3.2.1 The contour interval of the orthophoto map is…

A 5 meters

B 0.5 meters

C 20 meters

D 0.2 meters (1 x 1) (1)

3.2.2 The land use zone for the excavation at **J** on the topographical map is…

A residential zone
B rural-urban fringe
C transitional zone
D commercial zone (1 x 1) (1)

3.2.3 Account for the row of trees in area labelled **12**. (1 x 2) (2)

Refer to the section of the Klip River **10** and **11** on the orthophoto map.

3.2.4 Which bank (**10** or **11**) is more likely to be eroded in times of flood? (1 x 1) (1)

3.2.5 Why is this part of the river bank (answer to QUESTION 3.2.4 above) not cultivated? (1 x 2) (2)

Refer to the street pattern in block **E 4/5** on the orthophoto map.

3.2.6 Identify the street pattern in block **E 4/5** on the orthophoto map. (1 x 1) (1)

3.2.7 Explain TWO advantages of this street pattern. (2 x 2) (4)

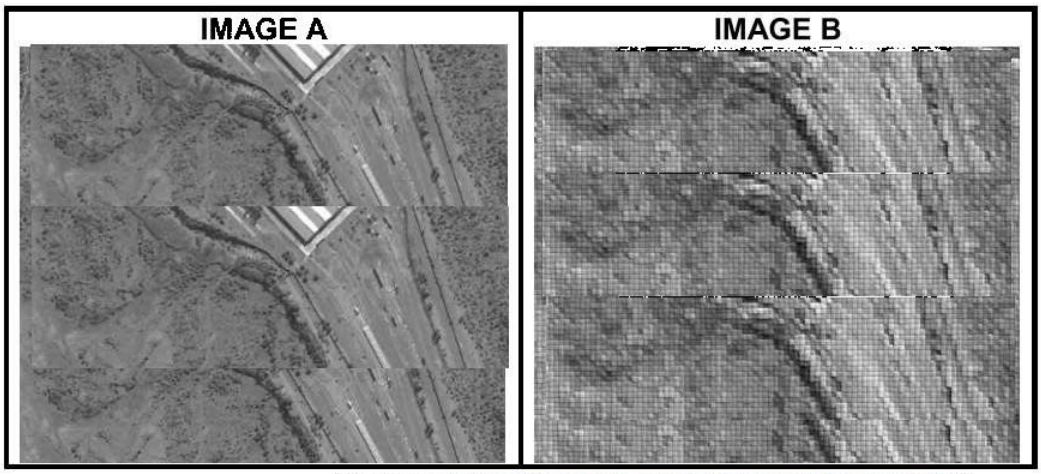
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3.3 Geographic Information Systems

3.3.1 Is the orthophoto map an example of (vector / raster) data? (1 x 1) (1)

3.3.2 Provide a reason to support your answer to QUESTION 3.3.1 above. (1 x 2) (2)

The industrial building in block **B4** of the topographical map is shown by the images below captured by a remote sensing device.



(Source: www.earth.google.com/web/search/Lady+smith/)

3.3.3 Define the concept *remote sensing*? (1 x 2) (2)

3.3.4 Name ONE factor in the remote sensing process that will affect the resolution of an image. (1 x 1) (1)

3.3.5 Why does image **A** have a higher resolution than image **B**? (1 x 2) (2)

TOTAL SECTION B: 30

GRAND TOTAL: 150

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