Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Department van Onderwys
Porafensie Ya Kapa Botjahabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2026

GEOGRAPHY P1

MARKS: **150**

TIME: **3 hours**

This question paper consists of 16 pages.

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS:

   SECTION A:
   QUESTION 1: CLIMATE AND WEATHER (60)
   QUESTION 2: GEOMORPHOLOGY (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. Start EACH question at the top of a NEW page.

5. Number the answers correctly according to the numbering system used in this question paper.

6. Do NOT write in the margins of the ANSWER BOOK.

7. Draw fully labelled diagrams when instructed to do so.

8. Answer in FULL SENTENCES, except when you have to state, name, identify or list.

9. Units of measurement MUST be indicated in your final answer, e.g. 1116 hPa, 32 °C and 2 m.

10. You may use a non-programmable calculator.

11. You may use a magnifying glass.

12. Write neatly and legibly.

SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

14. A 1 **:** 50 000 topographical map (EXTRACT FROM 2531BC MALELANE) and 1 **:** 10 000 EXTRACT FROM 2531BC 16 RIVERSIDE orthophoto map provided.

15. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

16. Show ALL calculations. Marks will be allocated for the steps in calculations.

17. You must hand in the topographic and the orthophoto map to the invigilator at the end of this examination session.

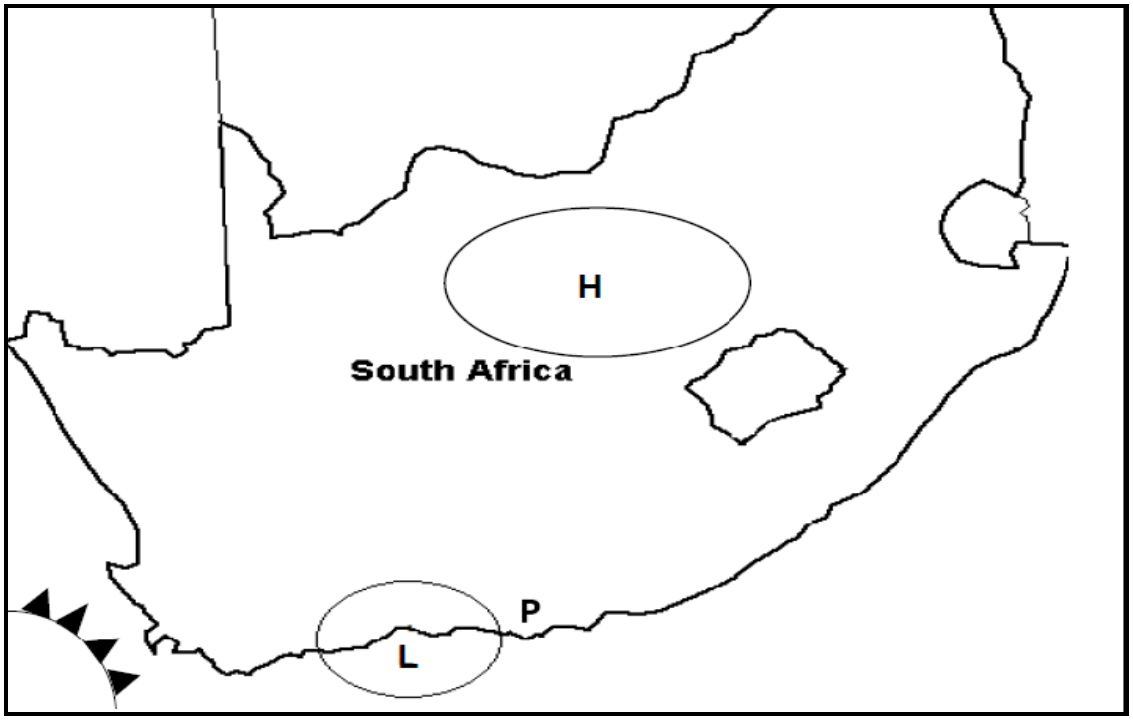
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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

1.1 Refer to the sketch map below that illustrates berg wind conditions over the coast at **P**. Choose the word or term in brackets that makes the statement TRUE. Write the answer next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, for example 1.1.8 Plateau.



[Adapted from South African Weather Patterns]

1.1.1 Berg wind conditions are regarded as a (winter/summer) phenomena in South Africa.

1.1.2 The low-pressure cell in the sketch is a (cut-off/coastal) low.

1.1.3 Berg winds blow from (the interior of South Africa/the sea).

1.1.4 The wind that blows at **P** is a (dry/humid) wind.

1.1.5 The temperature at **P** is going to (increase/decrease).

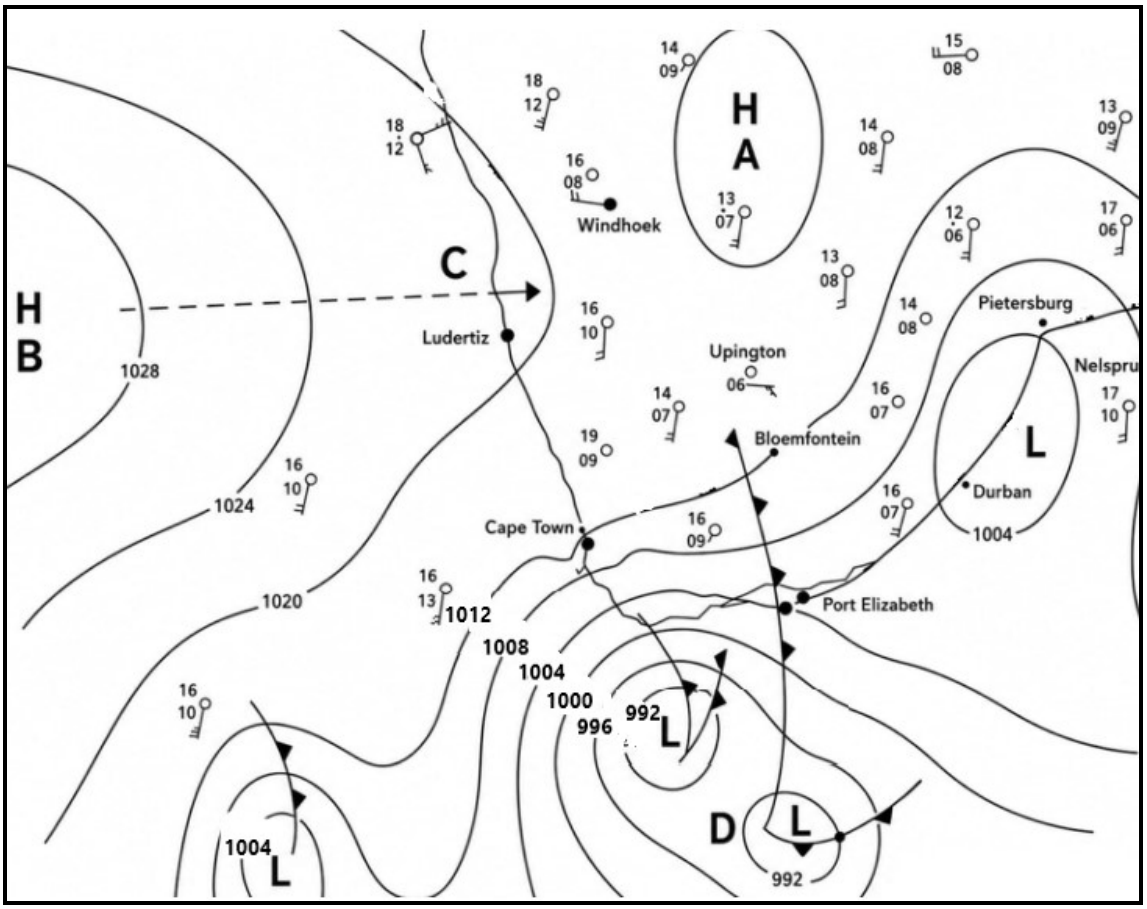
1.1.6 Berg winds lead to a (greater/smaller) chance of veld fires occurring.

1.1.7 Berg winds occur when a cold front (is approaching/has already passed) over the area. (7 x 1) (7)

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1.2 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 (1.2.1 to 1.2.8) in the ANSWER BOOK, for example, 1.2.9 D.



[Adapted from https://chatgpt.com/s/m_6a6acb5158988191acab103cadf49d84]

1.2.1 The pressure cell at **A** is the …

A South Atlantic anticyclone.
B South Indian anticyclone.
C Kalahari anticyclone.
D Tropical cyclone.

1.2.2 The surface air circulation around pressure cell **B** is …

A clockwise.
B anticyclone.
C ascending.
D descending.

1.2.3 The area of elongated high pressure cell at **C** is a …

A ridge.
B trough.
C saddle.
D front.

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1.2.4 The weather system at **D** forms because of the impact of the Coriolis force on the air movement between the … belts.

A subtropical high pressure and subpolar low pressure
B subtropical low pressure and subtropical high pressure
C subtropical high pressure and equatorial low
D equatorial low pressure and subpolar low pressure

1.2.5 The map presented on the previous page (page 4) is an example of a … synoptic weather map because of the … rainfall experienced over Cape Town.

(i) summer
(ii) winter
(iii) frontal
(iv) convectional

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

1.2.6 Weather system **D** usually brings … conditions to Cape Town in winter.

A dry and windy
B warm and rainy
C cold and rainy
D cold and dry

1.2.7 The weather conditions associated with pressure cell at **A** are …

A rainy conditions and floods.
B rainy conditions with clear skies.
C windy conditions with floods.
D dry conditions with clear skies.

1.2.8 The air pressure at the centre of pressure cell at Durban is … than 1004 hPa and moves from … along the coastline.

(i) lower
(ii) higher
(iii) east to west
(iv) west to east

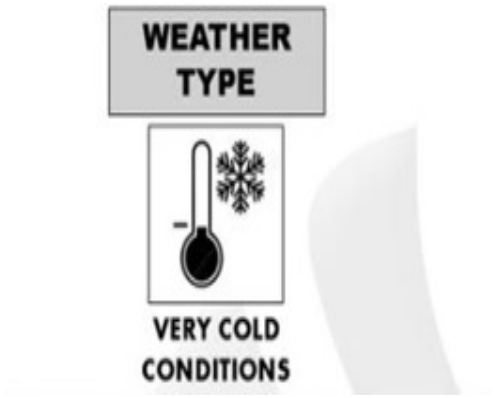
A (i) and (iii)
B (i) and (iv)
C (ii) and (iii)
D (ii) and (iv) (8 x 1) (8)

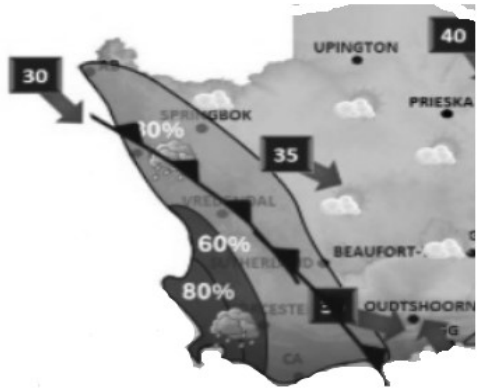
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1.3 Refer to the extract below on cold fronts.

VERY COLD, WET AND WINDY CONDITIONS





Valid from 18/06/2025 at 00:00 SAST until 21/06/2025 at 24:00 SAST

The South African Weather Service has issued a warning that, a series of cold fronts are expected to affect the Western Cape, Friday through to Sunday. The most significant cold front is focused to make landfall on Friday, bringing heavy downpours, strong winds and the risk of flooding in several areas of the province. A second cold front is expected on Sunday.

The small stock farmers and the public are advised to take the necessary precautions to ensure the safety and health of themselves and their livestock during these very cold days.

[Source: www.weathersa.co.za//home//warnings]

1.3.1 Define the term *cold front.* (1 x 2) (2)

1.3.2 Provide the term used to describe a series of connected mid-latitude cyclones. (1 x 1) (1)

1.3.3 Quote from the extract the weather that will be experienced as the cold front passes. (2 x 1) (2)

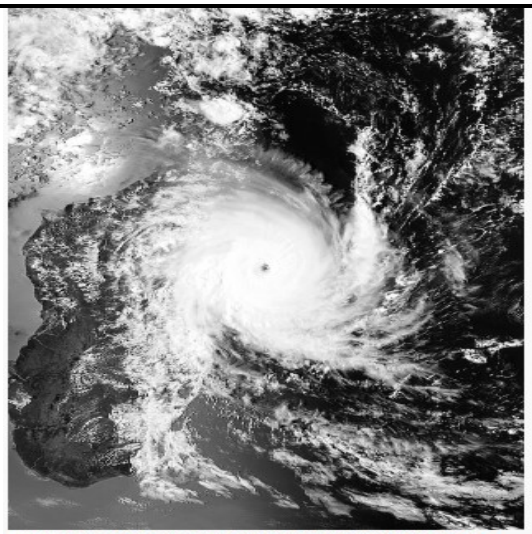
1.3.4 Why do cold fronts affect the Western Cape mainly in winter? (2 x 2) (4)

1.3.5 Discuss the importance of issuing weather warnings by the South African Weather Service. (3 x 2) (6)

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1.4 Refer to the infographic below on Tropical Cyclone Gezani.

FACT FILE	SATELLITE IMAGE
Category 3-tropical cyclone **Highest winds:** 205 km/h (125 mph) **Lowest pressure:** 956 hPa/mb	 Gezani at its peak intensity shortly before landfall in Madagascar on 10 February.
Gezani made a landfall near the city of Toamasina as an intense tropical cyclone, high end Category 3 on the Saffir-Simpson scale. It was reported that Gezani's storm surge was 1 m high and travelling at 250 km/h: accompanied by 10 m wave heights at this stage in the storm's lifespan. Satellite imagery displayed that the eye passed over the city. Following the landfall, Gezani rapidly weakened from an intense tropical cyclone to a severe tropical storm in a 12-hour window. [Source: http://en.wikipedia.org/wiki/Cyclone_Gezani]	

1.4.1 Give TWO pieces of evidence from the satellite image that suggest that Tropical Cyclone Gezani developed in the Southern Hemisphere. (2 x 1) (2)

1.4.2 According to the fact file, what was the atmospheric pressure reading when Tropical Cyclone Gezani reached the mature stage. (1 x 1) (1)

1.4.3 Describe the weather experienced as the eye past over the city. (1 x 2) (2)

1.4.4 Account for the development of the intense low pressure. (1 x 2) (2)

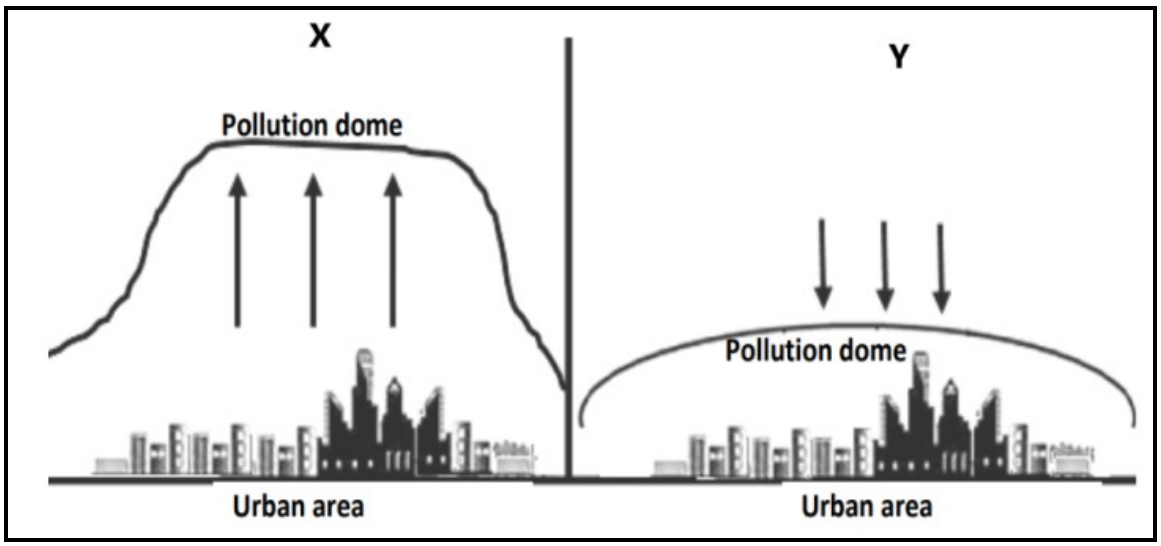
1.4.5 Explain why Tropical Cyclone Gezani was reduced to a tropical storm when it made a landfall. (2 x 2) (4)

1.4.6 How would the storm surge impact negatively on the environment along the coastal area? (2 x 2) (4)

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1.5 Study the sketch below on pollution dome.



[Adapted from www.education.gov.za]

1.5.1 What is a *pollution dome*? (1 x 2) (2)

1.5.2 Mention at least TWO causes of pollution from the sketch above. (2 x 1) (2)

1.5.3 Which sketch (**X/Y**) indicates the pollution dome during the day? (1 x 1) (1)

1.5.4 Why is the pollution dome compressed close to the surface at **Y**? (1 x 2) (2)

1.5.5 In a paragraph of approximately EIGHT lines, explain the strategies to reduce the pollution dome. (4 x 2) (8)

[60]

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QUESTION 2: GEOMORPHOLOGY

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 2.1.7) in the ANSWER BOOK, for example 2.1.8 D.

2.1.1 The upper reaches of a drainage basin which supplies the river with water.

A Watershed
B Interfluve
C Tributaries
D Catchment area

2.1.2 The upper limit of water that is found underground.

A Surface run-off
B Groundwater
C Infiltration
D Water table

2.1.3 The river channel intersects both wet and dry season water tables.

A Permanent river
B Periodic river
C Episodic river
D Exotic river

2.1.4 The drainage pattern that occurs in areas where there are alternate layers of hard rock and soft rock.

A Rectangular pattern
B Trellis pattern
C Deranged pattern
D Radial pattern

2.1.5 The measure of the total length of streams per unit area.

A Drainage density
B Drainage basin
C Drainage pattern
D Radial drainage pattern

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2.1.6 The classification of streams based on their hierarchical order within a watershed.

A Stream piracy
B Stream order
C River system
D Tributary

2.1.7 Surface run-off is low in areas that have … vegetation resulting in a … drainage density.

(i) sparse
(ii) dense
(iii) high
(iv) low

A (i) and (iii)
B (i) and (iv)
C (ii) and (iii)
D (ii) and (iv) (7 x 1) (7)

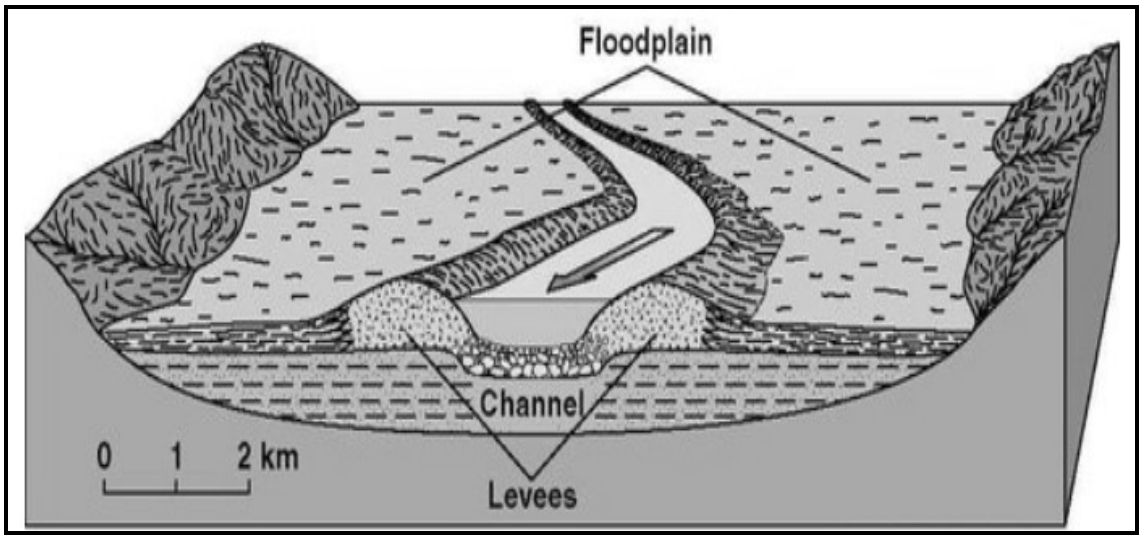
2.2 Match the statements in COLUMN A with the options in COLUMN B. Write only **Y** or **Z** next to the question numbers (2.2.1 to 2.2.8) in the ANSWER BOOK, for example 2.2.9 Z.

	COLUMN A	COLUMN B
2.2.1	The side view of a river channel from source to mouth	**Y** transverse **Z** longitudinal
2.2.2	Lateral erosion is dominant in the … course	**Y** upper **Z** middle
2.2.3	… flow occurs when the stream velocity is high and the riverbed is uneven	**Y** Turbulent **Z** Laminar
2.2.4	The river that has an uneven riverbed and many obstacles	**Y** ungraded **Z** graded
2.2.5	The lowest level to which the river can erode	**Y** abstraction **Z** base level
2.2.6	The process when a river regains its energy and erodes vertically again	**Y** river grading **Z** river rejuvenation
2.2.7	Landform formed as a result of renewed downward erosion	**Y** dam **Z** incised meander
2.2.8	The break in the slope of a river profile caused by a rejuvenated river	**Y** knickpoint **Z** terrace

(8 x 1) (8)

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2.3 Refer to the sketch below on a fluvial landform.



[Source: https://rossettgeography.weebly.com/floodplain-levees-estuaries.html]

2.3.1 In which course of the river do floodplains and natural levees dominantly develop? (1 x 1) (1)

2.3.2 Describe ONE characteristic of a floodplain. (1 x 2) (2)

2.3.3 Discuss the significance of floodplains in supporting human activities. (2 x 2) (4)

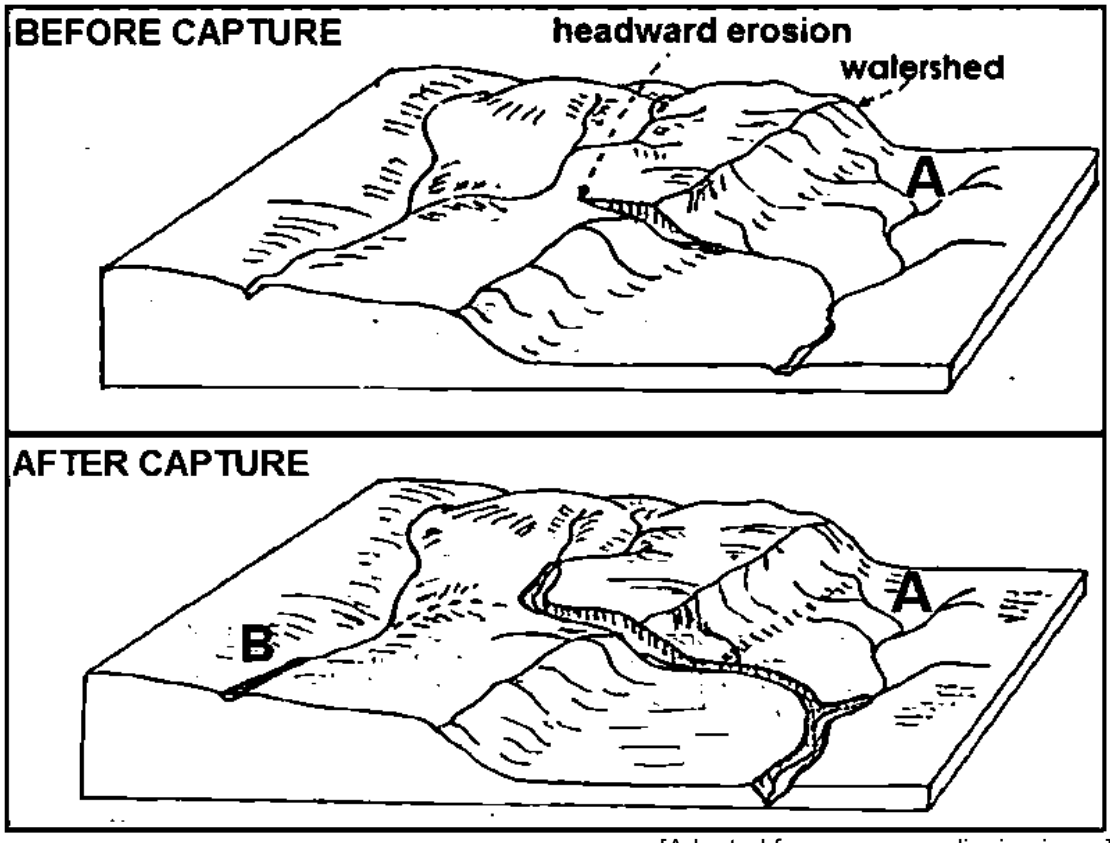
2.3.4 How do natural levees form? (2 x 2) (4)

2.3.5 Explain TWO positive impacts of natural levees on the surrounding area. (2 x 2) (4)

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2.4 Refer to the sketch below showing river capture.



[Adapted from ecorsesonlineiasri.com]

2.4.1 Define the term *river capture*. (1 x 2) (2)

2.4.2 State ONE condition that favoured headward erosion on river **A** before river capture. (1 x 1) (1)

2.4.3 Why is river **B** referred to as a misfit stream after river capture? (1 x 2) (2)

2.4.4 Account for the presence of river gravel in the wind gap after river capture. (2 x 2) (4)

2.4.5 Explain how the increase in the volume of water on the captor stream impacts on the ecosystem. (3 x 2) (6)

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2.5 Refer to the extract below on catchment and river management.

UMNGENI: A RIVER OF SEWAGE FLOWING THROUGH DURBAN

Every day, failing eThekwini sewage plants pollute the Umngeni River with more than four million litres of sewage that has only been partially treated, adding to an already high pollution load.

The Umngeni River, renowned for its scenic path from the Kwazulu-Natal Midlands to Durban's Blue Lagoon, has been a venue for the events like the Duzi Canoe Marathon which finishes at the Umngeni River mouth, attracting paddlers and tourists alike.

Municipal spokesperson, Gugu Sisilana told *GroundUp* that, the primary source of pollution in the Umngeni is sewer overflows caused by blockages and vandalised infrastructure, as well as "illegal connections". 90% of these, stated Sisilana, are caused by dumping "foreign objects" into the sewerage. These include rags, building rubble, nappies, oils and fats.

Environmental experts warn that the river's health not only jeopardises local biodiversity but, also poses significant health risks to humans through contaminated water sources and degraded ecosystems.

[Adapted from https://groundup.org.za>article>umngeni-a-river-sewage]

2.5.1 According to the extract, what activity is taking place at Umngeni River. (1 x 1) (1)

2.5.2 Identify TWO sources of pollution from the extract. (2 x 1) (2)

2.5.3 What negative impact has the sources of pollution mentioned in QUESTION 2.5.2 had on the river? (2 x 2) (4)

2.5.4 In a paragraph of approximately EIGHT lines, suggest measures that can be implemented to reduce the impact of pollution on this river. (4 x 2) (8)

[60]

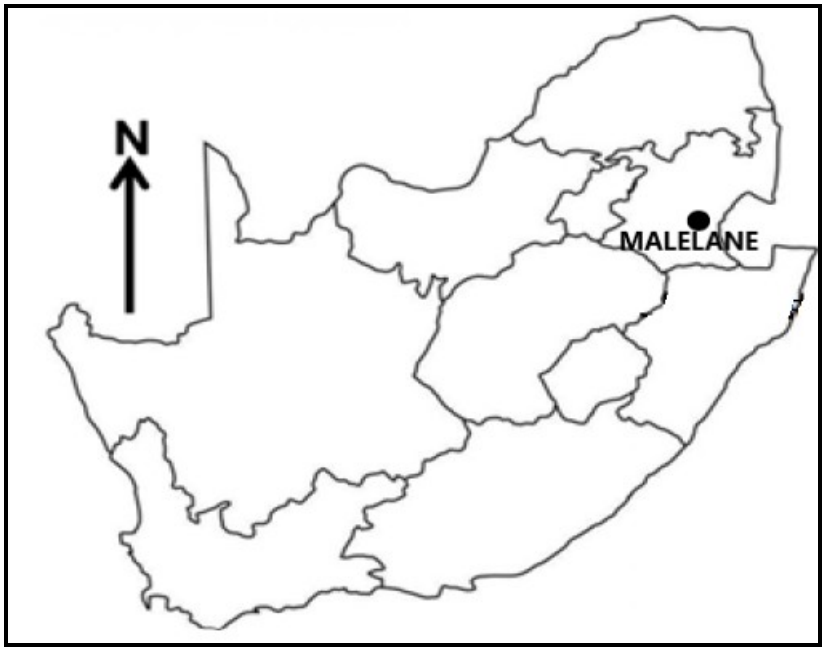
TOTAL SECTION A: 120

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SECTION B:

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON MALELANE



Co-ordinates: 25º29'S; 31º31'E

Malelane is a tropical farming town in Mpumalanga, South Africa, located along the N4 highway, roughly 66 km from Nelspruit. It serves as a major gateway to the southern Kruger National Pak and is renowned for its sugar cane, subtropical fruit, and game farming, offering easy access to Malelane Gate.

[Source: https://en.wikipedia.org]

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

ENGLISH	AFRIKAANS
Diggings	Uitgrawings
Golf course	Gholfbaan
River	Rivier
Sewerage works	Rioolwerke
Golf Driving Range	Gholf-dryfbaan
Nature Reserve	Natuurreservaat

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3.1 MAP SKILLS AND CALCULATIONS

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 (3.1.1 to 3.1.4) in the ANSWER BOOK, for example, 3.1.5 A.

3.1.1 Malelane town is located in ... province.

A Gauteng
B Mpumalanga
C Limpopo
D Free State (1 x 1) (1)

3.1.2 The topographical map has a … scale than the orthophoto map.

A larger
B equal
C smaller
D even (1 x 1) (1)

3.1.3 The contour interval on the orthophoto map is … meters.

A 20
B 15
C 10
D 5 (1 x 1) (1)

3.1.4 The feature located at grid reference/coordinates 25º27'05"S and 31º34'31"E is a …

A track and hiking trail.
B trigonometrical station.
C cultivated land.
D perennial river. (1 x 1) (1)

Refer to the topographical map.

3.1.5 Calculate the length of the landing strip in block **A5** in metres. (2 x 1) (2)

Refer to the orthophoto map.

3.1.6 Calculate the average gradient of **7** to **8**.

Use the following information: **HE is 3,4 cm** (4 x 1) (4)

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3.2 MAP INTERPRETATION

Refer to the topographical map.

3.2.1 Umngwenya river is a (perennial/non-perennial) river. (1 x 1) (1)

3.2.2 What is the general direction of flow of Matjulu river in block **B1**? (1 x 1) (1)

3.2.3 Give map evidence for your answer to QUESTION 3.2.2. (1 x 2) (2)

Refer to settlements **L** and **K** on the topographical map.

3.2.4 Will settlement **L** or **K** experience higher temperatures. (1 x 1) (1)

3.2.5 Give map evidence for your answer to QUESTION 3.2.4. (2 x 1) (2)

3.2.6 The eastern side of Umngwenya river has lower drainage density than the western side.

Provide map evidence to substantiate this statement. (1 x 2) (2)

Refer to letter **H** in block **C2** on a topographical map.

3.2.7 Provide a suitable name for the landform at **H**. (1 x 1) (1)

3.2.8 Describe ONE characteristic of the landform at **H**. (1 x 2) (2)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.3.1 What is *attribute data*? (1 x 2) (2)

3.3.2 State TWO attribute data of the river between point **F** and point **G** on the topographical map. (2 x 1) (2)

3.3.3 Identify the dominant activity in block **D2**. (1 x 1) (1)

3.3.4 Mention ONE data layer in block **D2**. (1 x 1) (1)

3.3.5 Evaluate how the activity identified in QUESTION 3.3.3 above can reduce the quality of water in the river. (1 x 2) (2)

TOTAL SECTION B: 30
GRAND TOTAL: 150

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