GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PREPARATORY EXAMINATION

2024

MARKING GUIDELINES

GEOGRAPHY (PAPER 1) (10781)

21 pages

MARKING PRINCIPLES FOR GEOGRAPHY – JUNE 2024

The following marking principles have been developed to standardise marking processes.

MARKING

- ALL questions MUST be marked, irrespective of whether thus are correct or incorrect.
- Where the maximum marks have been allocated for a particular question, place an **M** over the remainder of the text to indicate that the maximum marks have been achieved.
- A clear, neat tick must be used: ✓
  - If ONE mark is allocated, ONE tick must be used. ✓
  - If TWO marks are allocated, TWO ticks must be used. ✓✓
  - The tick must be placed at the FACT that a mark is being allocated for.
  - Ticks must be kept SMALL, as various layers of moderation may take place.
- Incorrect answers must be marked with a clear, neat cross: **X**
  - Use MORE than one cross across a paragraph/discussion style questions to indicate that all facts have been considered.
  - Do NOT draw a line through an incorrect answer.
  - Do NOT underline the incorrect facts.

NOTE THE FOLLOWING

- If the numbering is incorrect or left out, as long as the sequence of answers to questions is followed candidates can be credited.
- Spelling errors – if the word/term, is recognisable, award the marks provided the meaning is correct.
- Be sensitive to the sense of an answer, which may be stated in a different way.
- In questions where a letter is the accepted response, but the learner writes the actual answer – award marks.

TOTALLING AND TRANSFERRING OF MARKS

- Each subquestion must be totalled.
  - Questions in Section A has five subsections, therefore five sub-totals per question is required. Section B has three subsections and three subtotals.
  - Subsection totals to be written in the right-hand margin at the end of the subsection and underlined.
  - Sub-totals must be written legibly.
  - Leave space to write in the moderated marks on different levels.
- Total subtotals and transfer totals to the top left-hand margin next to question number.
- Transfer the final total to the cover of the answer book.

MODERATION

Moderation is done in the same way as the initial marking. All guidelines for marking must be adhered to.

If a mark for a subquestion is changed after moderation, the moderator must strike through the marker's mark and write down the new mark.

The total for the question must be recalculated, and similarly struck off and the new total to be written down.

EXAMPLE FOR MARKING

QUESTION 1 22

1.1 1.1.1 A (South Atlantic High) ✓

1.1.2 B (Kalahari High) ✓

1.1.3 B (South Indian) X (2)

1.2 1.2.1 Melting snow ✓

1.2.2 Mouth X

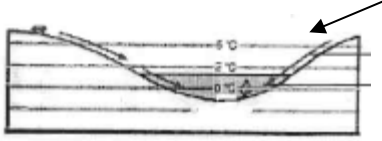
1.2.3 Third order ✓ (2)

1.3 1.3.1 Katabatic X

1.3.2 **1** occurs during the day while **2** occurs at night ✓✓

1.3.3 Cold air rolls down ✓✓ into the valley and forms an inversion.

Air flows downslope ✓✓



(6)

1.4 1.4.1 Shape of front concave X
Steep gradient of front ✓

1.4.2 Warm air undercuts the cold air X

1.4.3 Air behind the cold front is colder ✓✓ than the air in front. Cold air moves faster than warm ✓✓ air ahead of it. Cold front catches up with the warm front. (5)

1.5 1.5.1 (a) A river that only flows all year-round X

(b) The river channel is wide X

(c) Regularity ✓✓ of rainfall and the soil ✓✓ type over which the streams flow.

1.5.2 Gauteng ✓ and the Eastern Cape x

1.5.3 The cost of food production will increase as it is costly to buy purified water. Farmers will have to buy more chemicals ✓✓ to purify water. Chemicals cost a lot, and this will increase production costs. It will be costly to purify water for use in electricity generation. These costs will be included in electricity prices. Costs will increase the price of electricity during production. There will be less clean water to generate hydroelectricity. M (7)

SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

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 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 A.

1.1.1 C (1)/urban areas being warmer than rural areas.

1.1.2 D (1)/larger artificial surfaces.

1.1.3 A (1)/Albedo

1.1.4 A (1)/(i) and (iii)

1.1.5 C (1)/anabatic

1.1.6 B (1)/at night

1.1.7 A (1)/accumulation of cold air. (7 x 1) (7)

1.2 Read the statements below and choose the appropriate word(s) in brackets which will make the statement TRUE. Write down only the question numbers (1.2.1 to 1.2.8) and the answer in your ANSWER BOOK. E.g., 1.2.9 Decreased.

1.2.1 polar easterlies (1)

1.2.2 development stage (1)

1.2.3 family (1)

1.2.4 warm (1)

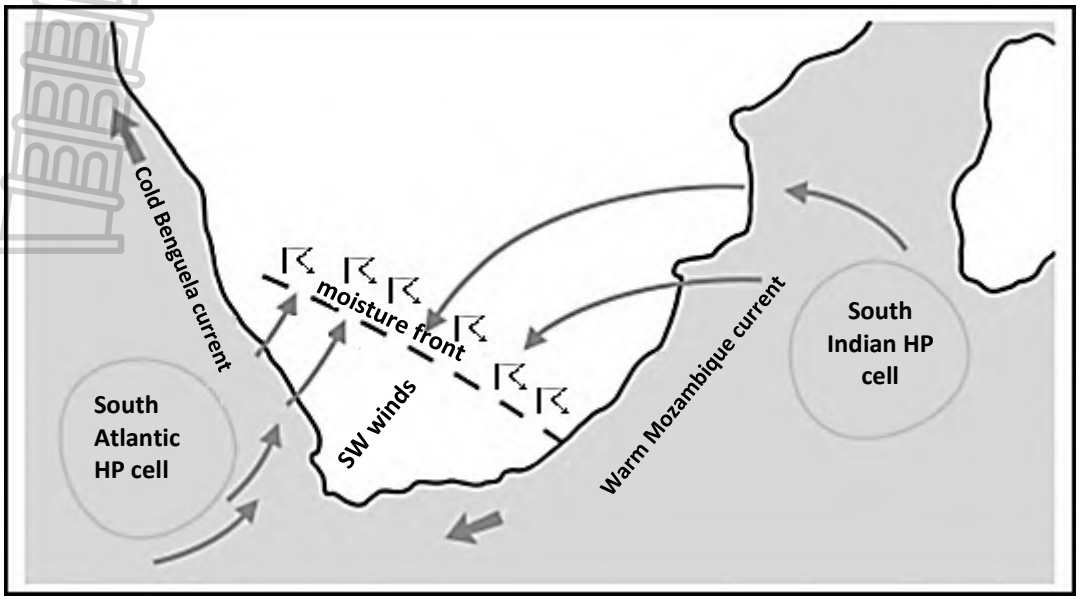
1.2.5 Cumulonimbus (1)

1.2.6 warm (1)

1.2.7 cold (1)

1.2.8 faster (1) (8 x 1) (8)

1.3 Refer to the sketch below showing line thunderstorms.



[Source: https://www.theanswer.co.za/wp-content/uploads/2021/11/Gr-12-Geography-3-in-1-Extracts.pdf]

1.3.1 What is a *moisture front*?

The zone between two air masses with different moisture content. (2) [CONCEPT] (1 x 2) (2)

1.3.2 State ONE piece of evidence from the sketch indicating that line thunderstorms are occurring.

Prevalence of thunderstorms along the moisture front/in a line. (1) (1 x 1) (1)

1.3.3 Use information from the sketch and explain why there will be more clouds located in the eastern part, instead of the western part of South Africa.

Cold dry air from the SW (South Atlantic High Pressure) forces warm moist air from the NE (South Indian High Pressure) to rise and condensation to take place. (2)
Warm moist air from the east (Warm Mozambique Current/onshore winds) reaches the interior and condensation takes place. (2)
Warm moist air on the eastern side of the country is more unstable because it is forced to rise up the escarpment. (2)

OR

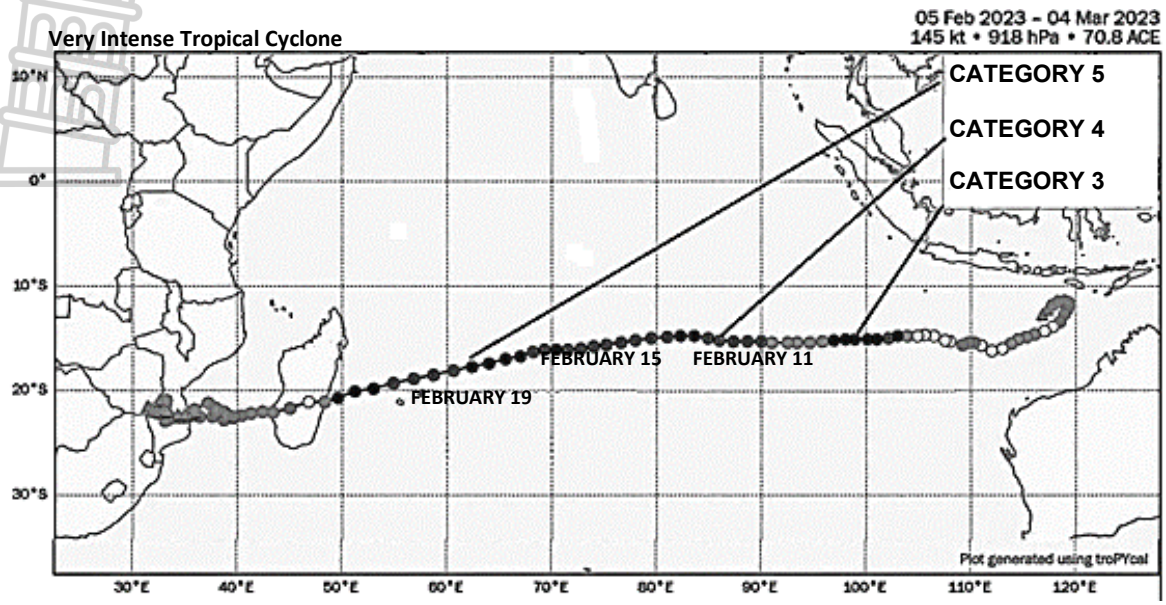
Air that feeds in from the SW (Cold Benguela Current) is cold and dry. (2)
Air on the western side of the country is more stable and condensation will not take place. (2)
[ANY TWO. CANDIDATES CAN REFER TO EITHER THE EASTERN OR WESTERN SIDE.] (2 x 2) (4)

1.3.4 In a paragraph of approximately EIGHT lines, explain how the summer location (position) of the high-pressure cells (anticyclones) promotes the development of line thunderstorms.

A weakened Kalahari High Pressure cell allows vertical rising of air above the interior. (2)
This encourages increased convergence of air masses from well-developed High Pressure cells. (2)
The South Indian High Pressure is found more to the east from the land and further south in summer. (2)
This allows warmer moist air to diverge from the South Indian High Pressure cell towards the interior. (2)
In summer, the South Atlantic high pressure extends along the south-east coast of the country. (2)
Cold and dry air diverges from the South Atlantic High Pressure cell to meet the warm moist air mass from the South Indian high pressure cell in the interior of the country. (2)
[ANY FOUR] (4 x 2) (8)
[15]

1.4 Refer to the infographic on Tropical Cyclone Freddy.

MOVEMENT OF TROPICAL CYCLONE FREDDY



[Adapted from: https://watchers.news/2023/03/06/tropical-cyclone-freddy-the-longest-lived-and-one-of-a-kind-tropical-cyclone-in-history/]

CYCLONE FREDDY

Tropical Cyclone Freddy was an exceptionally long-lived, powerful, and deadly storm that traversed the southern Indian Ocean for more than five weeks in February and March of 2023.

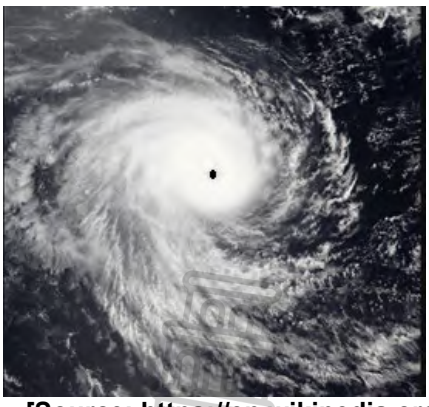
Freddy made its first landfall near Mananjary, Madagascar. The storm rapidly weakened overland but restrengthened in the Mozambique Channel.

The cyclone struck south-eastern Madagascar, damaging many homes. Impacts in Mozambique were more severe than in Madagascar and included heavy rainfall in the southern half of the country.

Hardest-hit was Malawi where incessant rains caused catastrophic flash floods, with Blantyre suffering the brunt of it. The nation's power grid was crippled, with its hydroelectric dam rendered inoperable. Food security was of particular concern, with millions of people left at risk.

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

SATELLITE IMAGE OF TROPICAL CYCLONE FREDDY



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

1.4.1 According to the infographic, what was the lifespan of Tropical Cyclone Freddy?

More than 5 weeks. (1) (1 x 1) (1)

1.4.2 Quote an example of infrastructural damage caused by Tropical Cyclone Freddy, as mentioned in the article.

"Damaging many homes" (1)
"power grid was crippled" (1)
"hydroelectric dam rendered inoperable" (1)
[ANY ONE] (1 x 1) (1)

1.4.3 Describe the rotation of winds as depicted (shown) in the satellite image.

Clockwise (1) (1 x 1) (1)

1.4.4 Suggest TWO possible reasons why Tropical Cyclone Freddy intensified from a category 3 to a category 5 cyclone between 11 February 2023 and 19 February 2023.

Warm ocean surface temperatures in the Indian Ocean (more than 26.5°C). (2)
LP intensified because of warm ocean temperature. (2)
Increased evaporation (over the Indian Ocean). (2)
Increase in the latent heat. (2)
Sufficient distance away from the equator for Coriolis force to take effect. (2)
Limited friction on the water surface. (2)
[ANY TWO] (2 x 2) (4)

1.4.5 What could have caused the rapid weakening of Tropical Cyclone Freddy when it made landfall near Mananjary?

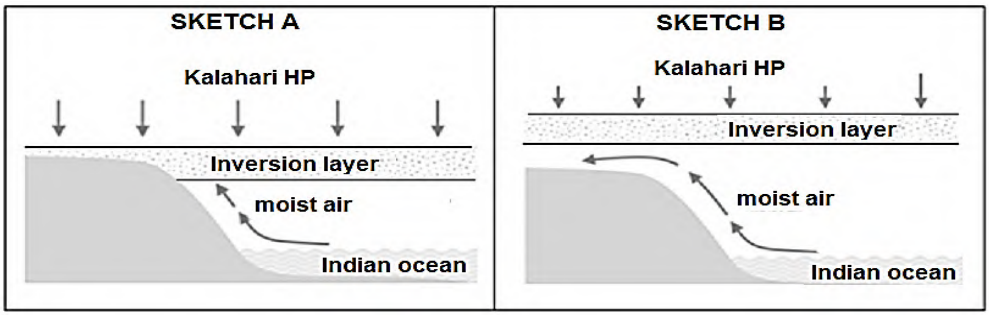
Lack of moisture (source). (2)
Frictional drag with the land surface. (2)
Reduced latent heat. (2)
[ANY ONE] (1 x 2) (2)

1.4.6 Suggest THREE strategies that the local authorities in Mozambique could implemented to prepare for the destruction caused by Tropical Cyclone Freddy.

Upgrading of their early warning systems/tracking/communication systems. (2)
Evacuation of inhabitants from coastal region. (2)
Mobilise emergency personnel. (2)
Prepare health facilities. (2)
Stockpile food and drinking water. (2)
Ensure a supply of medicines. (2)
Prepare community shelters. (2)
Tide breakers / sea walls to prevent flooding/damage of houses. (2)
Flood prevention methods (accept examples). (2)
Request assistance from neighbouring countries/international community. (2)
Community awareness programmes to educate residents on impact of tropical cyclones. (2)
[ANY THREE] (3 x 2) (6)

[15]

1.5 Refer to sketches **A** and **B** below, showing the inversion layer.



[Adapted from: https://www.theanswer.co.za/wp-content/uploads/2021/11/Gr-12-Geography-3-in-1-Extracts.pdf]

1.5.1 Define the term *temperature inversion*.

A rise/increase in temperature with an increase in height/altitude (2)
[CONCEPT] (1 x 2) (2)

1.5.2 Which of the sketches, **A** or **B**, represents the winter season?

A (1) (1 x 1) (1)

1.5.3 Provide evidence from the sketch to support your answer to QUESTION 1.5.2.

The dominant Kalahari High Pressure prevents moist air from reaching the interior (2)
The inversion layer is below the escarpment. (2)
Moist air is prevented from moving onto the plateau. (2)
[ANY ONE] (1 x 2) (2)

1.5.4 Explain the likely stable conditions experienced in the interior of South Africa in sketch **A**.

Air over the interior is descending. (2)
Air over the interior is cold/Cold air is more stable. (2)
The air warms adiabatically as it descends. (2)
The Kalahari High Pressure prevents warm moist air from reaching the interior. (2)
No condensation will occur in the interior. (2)
[ANY TWO] (2 x 2) (4)

1.5.5 A farmer in the Free State wants to plant crops that require large amounts of water. Explain why the climatological conditions depicted in sketch **B** would be suitable for this type of farming.

Diagram B represents summer conditions when there is more precipitation. (2)
The inversion layer is positioned above the escarpment which allows more moist air to flow into the interior. (2)
Kalahari High Pressure located at a higher altitude allowing for moist air to enter the interior. (2)
Warm, moist air (from the Indian Ocean) will reach the interior resulting in increased precipitation. (2)
Higher humidity will be present and can result in condensation and increased precipitation. (2)
Stronger convection currents develop which can lead t increased condensation and more precipitation. (2)
Increased condensation will occur over the interior during summer. (2)
More clouds will form over the interior which can lead to increased precipitation. (2)
[ANY THREE – MUST REFER TO SUMMER CONDITIONS] (3 x 2) (6)

[15]
[60]

QUESTION 2: GEOMORPHOLOGY

2.1 Refer to the diagram below. Complete the statements in COLUMN A with the options in COLUMN B. Write down only **Y** or **Z** next to the question numbers (2.1.1 to 2.1.7) in the ANSWER BOOK, e.g. 2.1.8 Y.

2.1.1 ***Z (1)/ungraded***

2.1.2 ***Y (1)/upper***

2.1.3 ***Y (1)/Vertical***

2.1.4 ***Y (1)/waterfall***

2.1.5 ***Y (1)/Headward***

2.1.6 ***Z (1)/concave***

2.1.7 ***Y (1)/Laminar*** (7 x 1) (7)

2.2 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 (2.2.1 to 2.2.8) in the ANSWER BOOK, e.g. 2.2.9 A.

2.2.1 ***D (1)/deranged***

2.2.2 ***D(1)/superimposed***

2.2.3 ***D (1)/(i) and (iv)***

2.2.4 ***A (1)/antecedent***

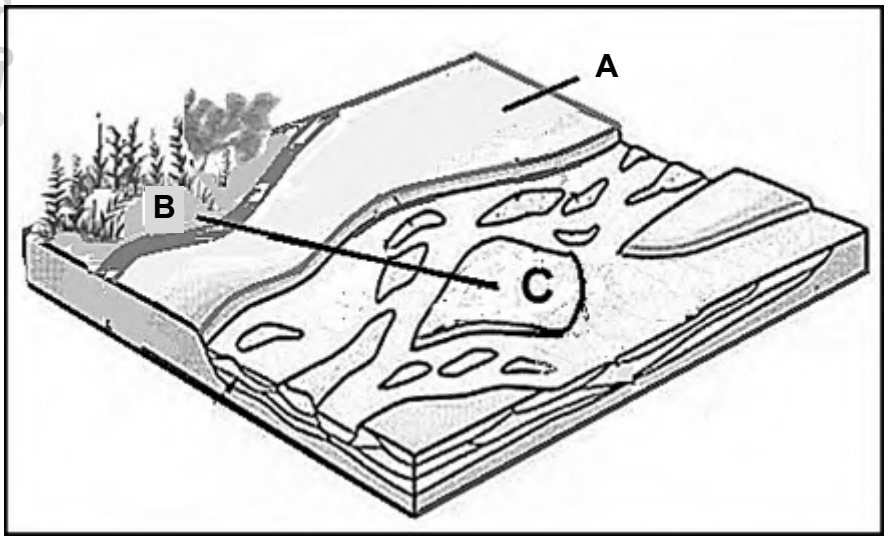
2.2.5 ***A (1)/radial***

2.2.6 **B (1)/*a dome and a central basin***

2.2.7 ***D (1)/D ; E ; C***

2.2.8 ***A (1)/steeper; low*** (8 x 1) (8)

2.3 Study the sketch below of a braided river channel.



[Source: Adapted from https://people.uwec.edu/jolhm/NZ/Below/Home.html]

2.3.1 Define the concept *braided river channel.*

A braided river consists of a network of river channels separated by small, often temporary, islands. (2)
[CONCEPT] (1 x 2) (2)

2.3.2 Identify the fluvial features labelled **A** and **C**.

A – Floodplain/ (1)
C – Island (1)/sand bank/alluvium/sand deposits (2 x 1) (2)

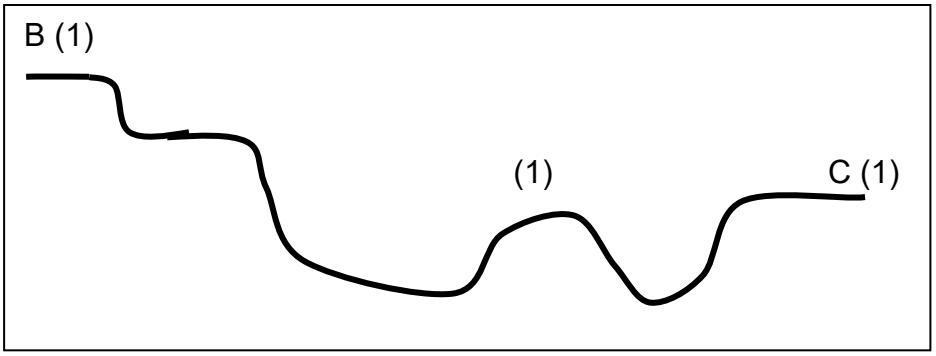
2.3.3 (a) The (upper/middle/lower) fluvial (river) course is depicted in the sketch.

Lower (1) (1 x 1) (1)

(b) Give THREE pieces of evidence from the sketch to support your answer in QUESTION 2.3.3 (a).

Gentle gradient (1)
Alluvial deposits/sand banks (1)
Braided channel (1)
Meandering river (1)
Wide flood plain (1)
[ANY THREE] (3 x 1) (3)

2.3.4 Draw a freehand labelled cross section along line **B – C**.



1 mark for label of slope B
1 mark for label of slope C
1 mark for the indication of the island (alluvium/sediment) (3 x 1) (3)

2.3.5 Explain why a tourist should not set up a camping site at point **C**?

C consists of fluvial deposits which are unstable. (2)
The soil at C is unstable which can erode rapidly. (2)
C will be prone to flooding which can result in a dangerous situation. (2)
It is located in the river channel which is prone to flooding. (2)
It will be unsafe to access/exit site. (2)
[ANY TWO] (2 x 2) (4)

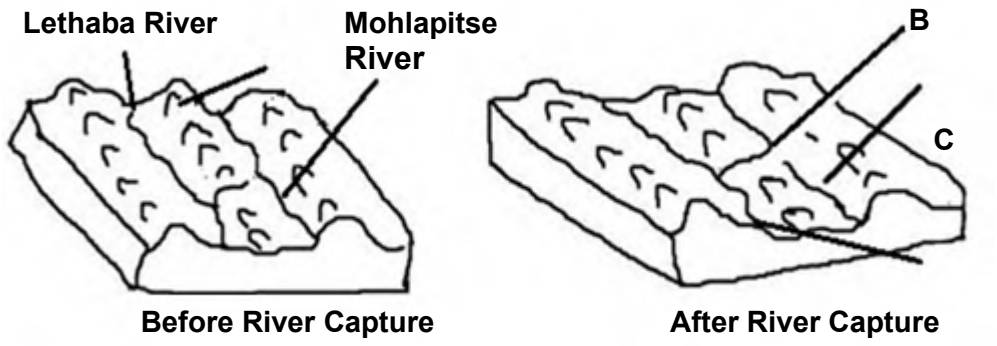
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2.4 Study the following information on river capture.

RIVER CAPTURE IN WILDERNESS

A river capture site can be found nine kilometres down the Georges Valley Road, at the turn off to the Wolkberg Wilderness Area, a point on the Lethaba River where a prehistoric act of "piracy" occurred during the process of headward erosion. It was here, many long years ago that the Great Lethaba River eroded back into the hills and captured the headwaters of the Mohlapitse River. Today the Lethaba River flows fast and clear at this spot, whereas the Mohlapitse, deprived of the previously strong flows is now a soggy and confused wetland, uncertain of how it will gather strength and flow down into the distant Olifants River.

[Source:https://www.iinfo.co.za/content/river-capture-site-georges-valley]



[Source: Examiner's own sketch]

2.4.1 Define the concept *river capture*.

River capture occurs when one river (more energetic/lower lying) cuts through the watershed and intercepts another (less energetic/higher lying) river robbing it of its headwaters. (2)
[CONCEPT] (1 x 2) (2)

2.4.2 Provide the geomorphological terms for the features indicated as**:**

(a) The high lying area labelled **A**

***Watershed (divide)* (1)** (1 x 1) (1)

(b) A resultant feature of river capture labelled **B**
***Elbow of capture* (1)** (1 x 1) (1)

afr 2.4.3 Quote evidence from the case study, that the misfit stream occurs in area **C**.

"deprived of the previously strong flows" (1)
"soggy and confused wetland." (1) (1 x 1)
[Any ONE] (1)

2.4.4 Discuss how the flow characteristics in the Great Lethaba River will change after river capture.

The volume of the water in the river increased. (2)
Carrying capacity of river increases. (2)
River's velocity/speed increases. (2)
River has more energy (turbulent flow). (2)
River will rejuvenate because of more energy. (2)
River has more vertical erosive power. (2)
River will experience less deposition. (2)
[ANY TWO] (2 x 2) (4)

2.4.5 Describe the impact on farming activities along the Mohlapitse River after river capture.

Shortage of water results in dying of crops/vegetation and livestock. (2)
Farmers forced to grow crops that can survive drier conditions. (2)
Farmers will need to look at alternative sources of water e.g. boreholes and windmills. (2)
Decrease of production (2)
New skills training of farmers on growing crops that require less water. (2)
More funding because of limited water sources. (2)
New farming methods should be introduced. (2)
Water transfer schemes from areas of excess water. (2)
New seed crop varieties for drought resistant crops. (2)
[ANY THREE] (3 x 2) (6)
[15]

2.5 Study the article below on river management in KwaZulu-Natal.

KZN SEWAGE LEAKS A BREEDING GROUND FOR DISEASE, WARNS EXPERT.

As of 7 October, the Westbrook, Bronze, Umhlanga, Umdloti, Isipingo, Reunion, Pipeline, Toti Main, Warner, Baggies, Winklespruit, Garvies and Ansteys beaches remain closed. Not only are beaches closed, frightening E-coli sample collection results, a damning Blue Drop Report and sewage leaks have compounded the province's lack of adequate infrastructure. Roads and critical infrastructure including a number of water treatment plants and pipes were damaged in the last season of flooding and has not yet been repaired. Footage of raw sewage flowing from Port Shepstone Hospital into a nearby uMzimkhulu River, has once again put the spotlight on KwaZulu-Natal's dire water treatment crisis.

According to the eThekwini mayor Mxolisi Kaunda, Johanna Road and Ohlange Sewage pump stations and the Northern Wastewater Treatment Works were largely responsible for high E-coli readings and water quality concerns.

Speaking to The Citizen, Professor Anthony Turton from the University of Free State Centre for Environmental Management, Turton painted a bleak picture of KZN's water woes. Turton said sewage risks in KZN are associated with hepatitis A, which is a waterborne pathogen. "This means that we are exposing pathogens in wetlands and aquatic ecosystems to a wide range of drugs" Turton warned.

[Source: Adapted from https://www.citizen.co.za/news/south-africa/kzn-sewage-leaks-disease-warning-10-october-2022]

2.5 2.5.1 Define the concept *river management.*

A process of sustaining or maintaining water resources and drainage basins to ensure the availability of clean and safe water for consumption and aquatic life. (2) [CONCEPT] (1 x 2) (2)

2.5.2 What was the main source of pollution which resulted in the closure of beaches in KwaZulu-Natal?

Raw sewage leaks (flowing into a nearby river) (1) (1 x 1) (1)

2.5.3 Quote evidence from the article that suggests that the lack of maintenance of infrastructure resulted in the pollution of rivers.

"Roads and critical infrastructure including a number of water treatment plants and pipes were damaged in the last season of flooding and has not yet been repaired" (2) (1 x 2) (2)

2.5.4 What impact might the pollution identified in QUESTION 2.5.2, mentioned in the article, have on the natural environment?

Pollutes wetlands. (2)
Eutrophication. (2)
Destroys ecosystems. (2)
Destroys natural plant and animal life. (2)
Destroys biodiversity. (2)
Causes water to be dirty/smelly. (2)
[Any ONE] (1 x 2) (2)

2.5.5 In a paragraph of approximately EIGHT lines, discuss sustainable strategies that can be implemented by the eThekwini municipality to reduce the pollution of the rivers in KwaZulu-Natal.

Awareness campaigns/education of communities. (2)
Buffering of rivers to limit access to rivers. (2)
Heavy fines for people and companies that are caught littering/polluting. (2)
Maintaining the wetlands as they help purify water. (2)
Regular testing of water quality. (2)
Environmental Impact Assessment conducted. (2)
Avoiding settlements and developments closer to rivers. (2)
Regular maintenance of wastewater treatment works and sewage pumps. (2)
Regular maintenance of infrastructure. (2)
Improving waste management. (2)
Legislation to prevent pollution. (2)
Reduce the use of (inorganic) fertilizers. (2)
Provide incentives to reduce pollution. (2)
Upskill farmers to reduce poor farming methods. (2)
Planting of natural vegetation along the river banks. (2)
[Any FOUR] (4 x 2) (8)

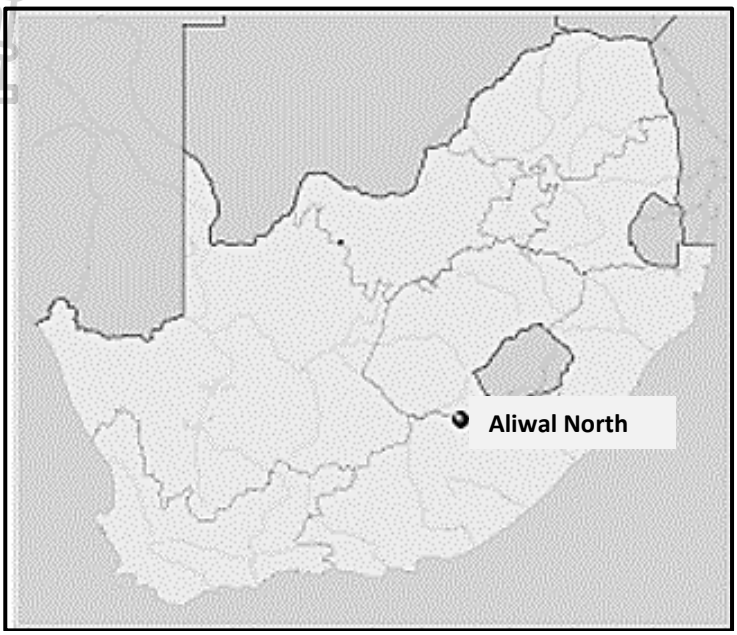
[15]
[60]

TOTAL SECTION A: 120

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON ALIWAL NORTH



Coordinates: 30°42′S ; 26°42′E

Aliwal North (officially Maletswai) is a town in central South Africa on the banks of the Orange River, Eastern Cape Province. The settlement is situated across the Orange River, just below its confluence with the Kraai River. To the south-west of the town, the Kramberg rises to 2 000 m above sea level. In Aliwal North, the summers are warm, the winters are short, cold, and dry. The month with the most wet days in Aliwal North is February, with an average of 9,1 days with at least 1 mm of precipitation.

[Adapted from https://en.wikipedia.org/wiki/aliwal noorde]

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

ENGLISH	***AFRIKAANS***
River	*Rivier*
Orange	*Oranje*
Furrow	*Voor*
Recreation	*Ontspanning*
Church	*Kerk*
Valley	*Vallei*

3.1 MAP SKILLS AND CALCULATIONS

3.1.1 ***B (1)/Eastern Cape*** (1 x 1) (1)

3.1.2 ***Latitude(1)*** (1 x 1) (1)

3.1.3 Refer to the graveyard in block **D1** on the topographical map.

Calculate the area in m² of the graveyard in block **D1** if the length is 1,1 cm and the breadth is 0,7 cm.

Formula: Length x Breadth
= (1,1 cm x 500 m) x (0,7 cm x 500 m)
= 550 m (1) x 350 m (1)
= 192 500 m² (1) (3 x 1) (3)

3.1.4 Refer to the topographic map.

(a) Calculate the true bearing from trigonometrical station **56** in block **C2** to spot height **1398** in block **E2**.

178° (1) Range (177° – 179°) (1 x 1) (1)

(b) Calculate the magnetic bearing from trigonometrical station **56** in block **C2** to spot height **1398** in block **E2** if the current magnetic declination is 24°43´ west of true north.

Magnetic bearing = True bearing + Magnetic declination
= *178' + (1) 24° 43'*
= *202° 43' (1)*
Range (201° 43' - 203° 43') (2 x 1) (2)

(c) Why is it important to calculate the present magnetic bearing?
It is the most accurate way of giving direction from one place to another. (2) (1 x 2) (2)

[10]

3.2 MAP INTERPRETATION

Refer to the topographical map.

3.2.1 (a) ***B (1)/Trellis.*** (1 x 1) (1)

afr (b) Compare the drainage density at **R** in block **A3**, and **S** in block **B3** respectively.

R – Low density (1)
S – High density (1) (2 x 1) (2)

(c) Provide evidence from the topographical map to justify your answer in QUESTION 3.2.1 (b).
S – There are more streams visible (2)
R – There are FEWER streams visible (2) (2)

The total length of streams is higher in block B3 (S) than in block A3 (R). (2)
[ANY ONE] (1 x 2)

3.2.2 (a) Refer to the tributary **T** in block **B4** and **B5**, on the topographical map. In which direction is the tributary flowing?

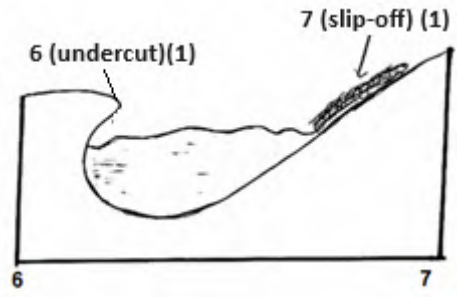
South Easterly (1)
ESE (1)
(ANY ONE) (1 x 1) (1)

(b) Provide evidence from the topographical map to support your answer in QUESTION 3.2.2 (a).

The dam walls face SE, therefore the river flows to the direction in which the dam wall faces. (2)
The heights on map indicate SE flow – tributary flows from a high point to a low point. (2)
Tributaries join at an acute angle from north-westerly direction. (2)
Contour line bending in a northwest direction. (2)
[ANY ONE] (1 x 2) (2)

3.2.3 Refer to Lines **6 – 7** in block **A3 – B3** on the orthophoto map.

(a) Draw a labelled freehand cross section from point **6** to point **7** on the orthophoto map. (2 x 1) (2)



(b) Refer to point **7** on the orthophoto map**.** Explain why deposition is the main process taking place at this point.

Slow moving water does not have the carrying capacity. (2)
River velocity is low and larger fluvial particles are deposited. (2)
On the inside of the bend, where the river flow is slower, material is deposited, as there is more friction. (2)
[ANY ONE] (1 x 2) (2)
[12]

3.3 **GEOGRAPHICAL INFORMATION SYSTEMS (GIS)**

Read the extract below to answer QUESTION 3.3.1.

The new owner of the farm (Waaiplaas), in block **A5** (on the topographical map) wants to identify the best place to graze his cattle.

3.3.1 Identify ONE of the GIS processes the farmer would use to identify the best place to graze his cattle.

Data manipulation/data integration/buffering/querying/
Data layering/remote sensing (1)
[Any ONE] (1 x 1) (1)

Refer to Waaiplaas in block **A5** on the topographical map.

3.3.2 (a) Name ONE human-made point feature in block **A5**, used to extract ground water.

Windpump (1) (1 x 1) (1)

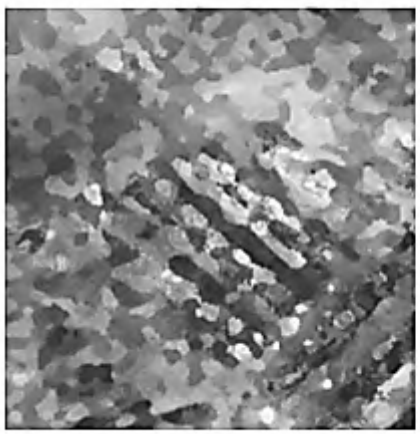
(b) Name ONE human-made line feature in block **A5**, used to control the flow of water.

Line – dam wall (1) (1 x 1) (1)

Refer to image **A** and image **B** of block **D3**, on the orthophoto map.

A and **B** are images of the settlement located in block **D3**.

A



B



(Source: Examiner's adapted snippet)

3.3.3 (a) Which image **A** or **B**, illustrates a high-resolution image?

Image B (1) (1 x 1) (1)

(b) Motivate your answer in QUESTION 3.3.3 (a).

It is more clear/has more clarity. (2)
There are more/smaller pixels in image B. (2)
There are less/larger pixels in image A. (2)
[ANY ONE] (1 x 2) (2)

(c) Explain why images **A** and **B**, are examples of raster data.

Information is displayed as pixels/grid cells. (2) (1 x 2) (2)

TOTAL SECTION B: 30

TOTAL: 150