KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PROVINCIAL STANDARDISED ASSESSMENT

GRADE 12

GEOGRAPHY P1

PREPARATORY EXAMINATION

SEPTEMBER 2026

MARKS: 150

TIME: 3 hours

This question paper consists of 15 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. Leave a line between the subsections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number the 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 you have to state, name, identify or list.
10. Units of measurement MUST be indicated in your final answer, e.g. 1020 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

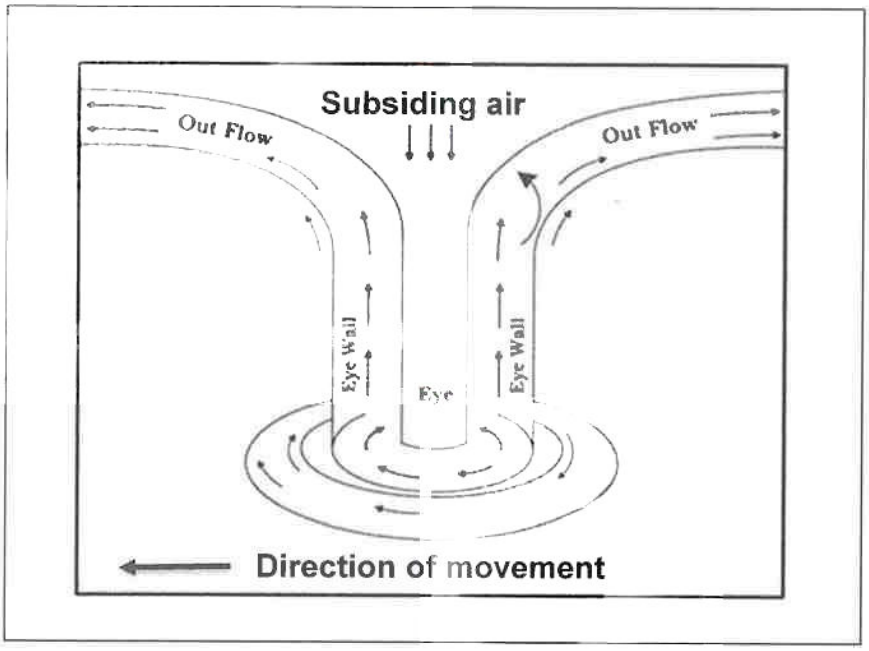
14. A 1 : 50 000 topographical map 3318 DD STELLENBOSCH and a 1 : 10 000 orthophoto map 3318 DD 18 STELLENBOSCH are provided.
15. The area demarcated in RED/BLACK on the topographical map represents the area covered by the orthophoto map.
16. Show ALL calculations. Marks will be allocated for steps in calculations.
17. You must hand in the topographical and orthophoto map to the invigilator at the end of this examination.

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

1.1. Refer to the cross section of a tropical cyclone below. Complete the statements in COLUMN A with the options in COLUMN B. Write only **Y** or **Z** next to the question numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, e.g. 1.1.9 Y.



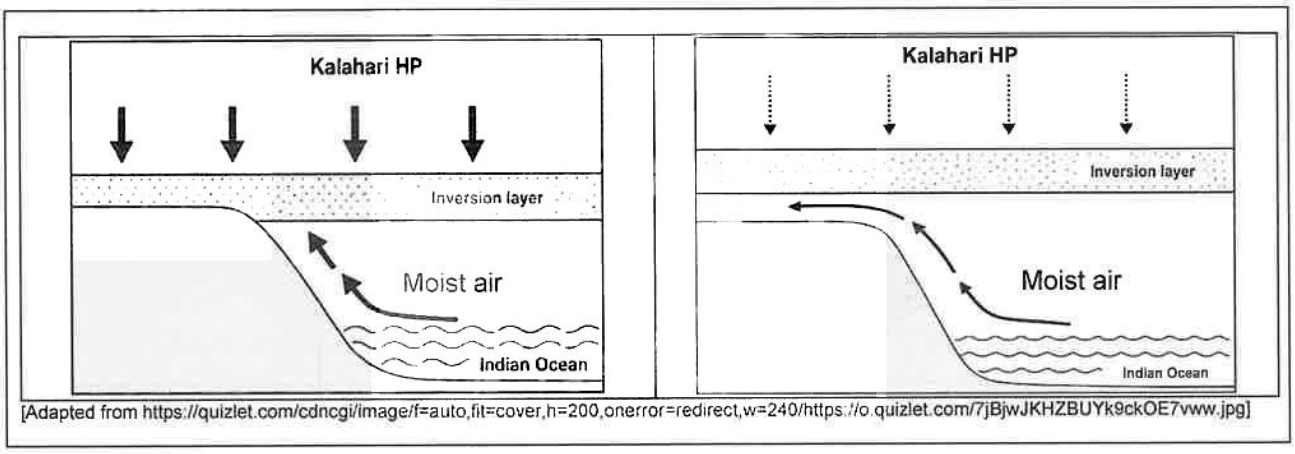
[Adapted from https://www.legacyias.com/atmospheric-circulation/]

1.1.1	The direction of movement of a tropical cyclone is …	Y Z	eastwards. westwards.
1.1.2	The eye wall is characterised by …air.	Y Z	ascending subsiding
1.1.3	The eye of a tropical cyclone is the …	Y Z	cold core. warm core.
1.1.4	… occurs in the eye of a tropical cyclone.	Y Z	Adiabatic heating Adiabatic cooling
1.1.5	Subsiding air in the eye results in …	Y Z	clear skies. overcast conditions.
1.1.6	Wind speed … towards the eye of a tropical cyc lone	Y Z	decreases increases
1.1.7	… clouds are found in the eye wall.	Y Z	Nimbostratus Cumulonimbus
1.1.8	Upper air … causes air to descends in the eye.	Y Z	convergence divergence

(8 x 1) (8)

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1.2 The sketches below show the position of the inversion layer. State whether the statements refer to WINTER OR SUMMER. Write only the correct answer next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK. e.g 1.2.8 summer.



[Adapted from https://quizlet.com/cdncgi/image/f=auto,fit=cover,h=200,onerror=redirect,w=240/https://o.quizlet.com/7jBjwJKHZBUYk9ckOE7vww.jpg]

1.2.1 The inversion layer is below the level of the plateau.

1.2.2 Subsiding air is strong.

1.2.3 Moist air reaches the interior.

1.2.4 More condensation and rainfall is expected.

1.2.5 Anticyclonic conditions prevail.

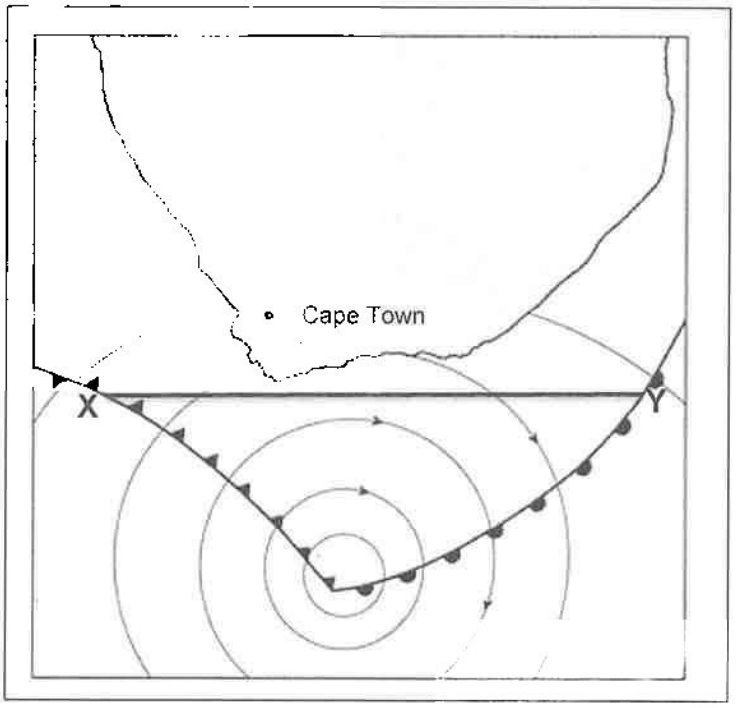
1.2.6 Unstable conditions occur.

1.2.7 Higher pressure exerted by air on the earth surface.

(7 x 1) (7)

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1.3 Refer to the sketch below showing a mid-latitude cyclone.



[Source: https://zwarries.co.za/site/wp-content/uploads/2022/12/Klimaat-Konsolidasie.pdf]

1.3.1 Identify the stage of development represented in the sketch. (1 x 1) (1)

1.3.2 Give ONE reason for your answer to QUESTION 1.3.1 above. (1 x 2) (2)

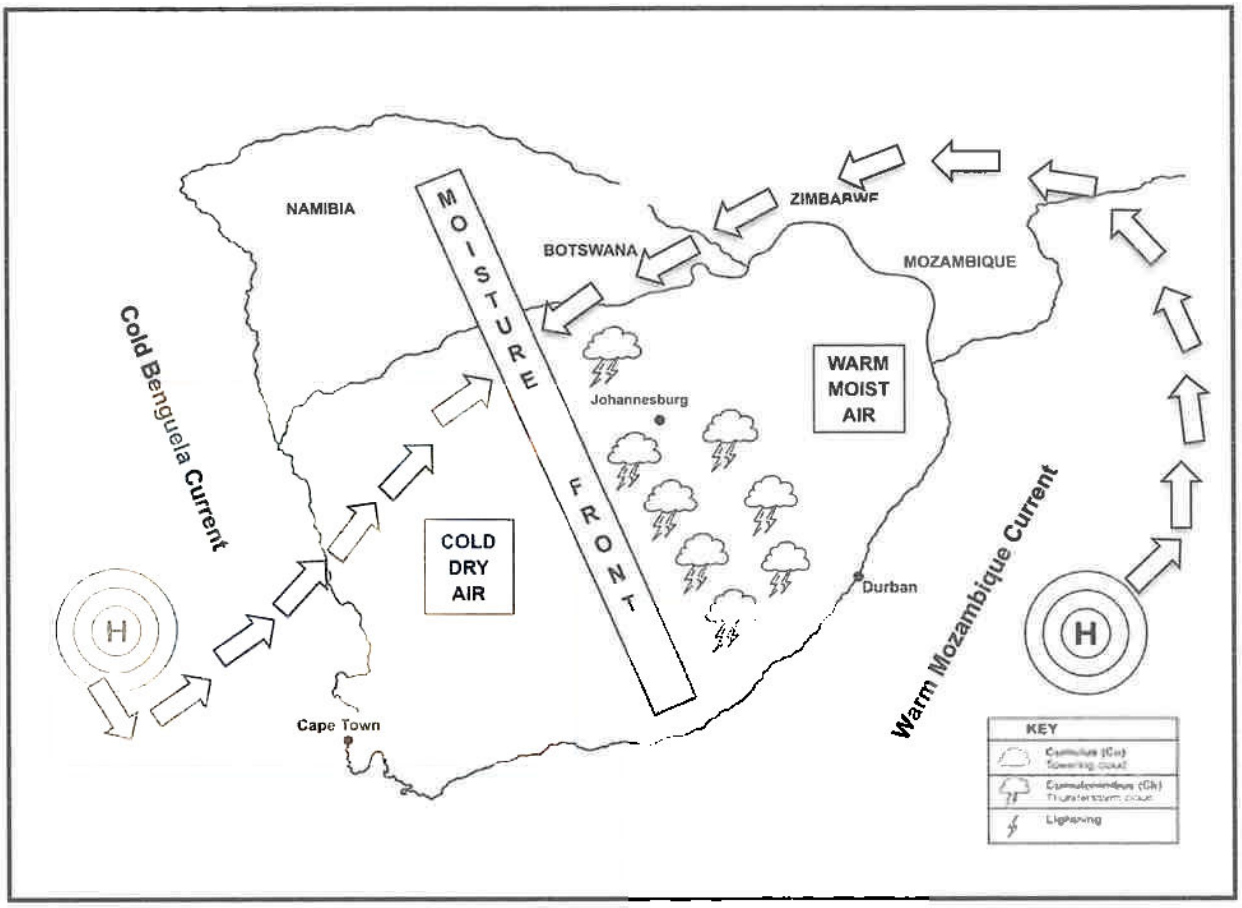
1.3.3 Predict weather conditions that will be experienced at Cape Town over the next 24 hours. (2 x 2) (4)

1.3.4 Account for the predicted weather conditions in QUESTION 1.3.3. (2 x 2) (4)

1.3.5 Draw a fully labelled cross section from **X** to **Y** showing the following:

(a) cloud type
(b) warm sector
(c) precipitation (4 x 1) (4)

1.4. The sketch below shows the development of a line thunderstorm.

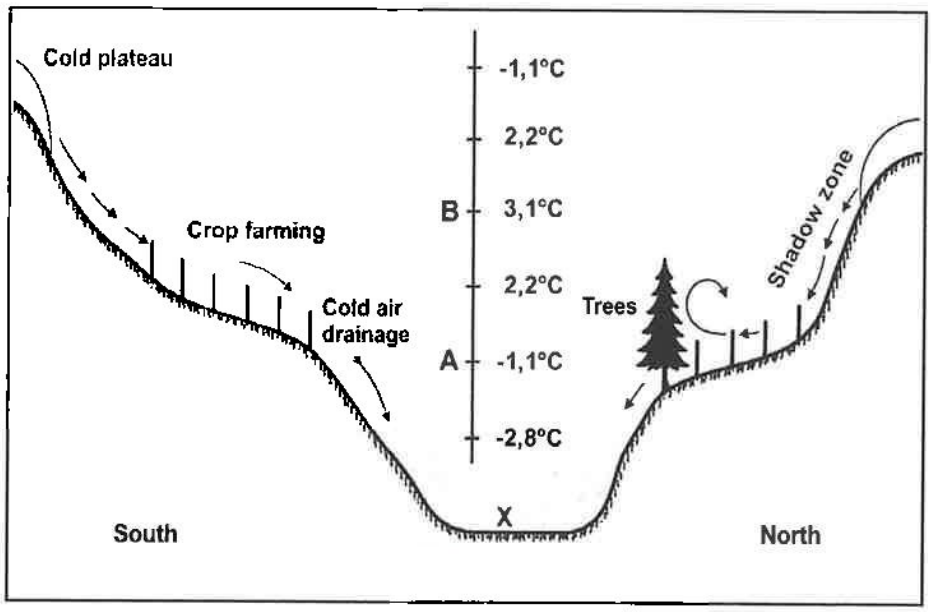


[Adapted from: https://i.ytimg.com/vi/wyCQVcRtlJA/maxresdefault.jpg

1.4.1	Define the concept *moisture front.*	(1 x 2)	(2)
1.4.2	Name the moist air found east of the moisture front.	(1 x 1)	(1)
1.4.3	What are TWO forms of precipitation associated with line thunderstorms?	(2 x 1)	(2)
1.4.4	Why is the air from the west of the moisture front dry?	(1 x 2)	(2)
1.4.5	In a paragraph of approximately EIGHT lines, discuss the negative impact of line thunderstorms on the physical environment.	(4 x 2)	(8)

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1.5 The sketch below shows a valley climate.

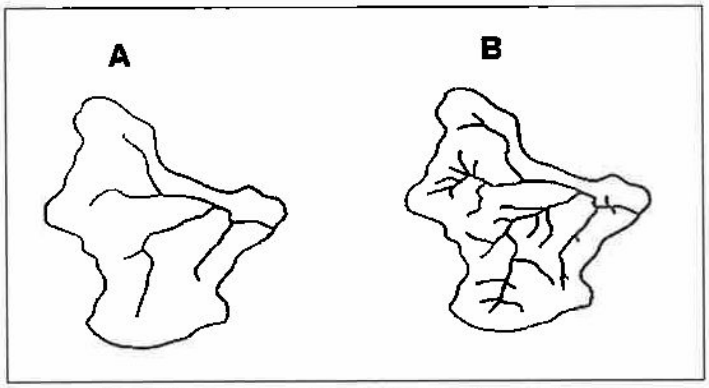


[Adapted from https://journals.ashs.org/hortsci/view/journals/hortsci/43/6/article-p1652.xml]

1.5.1	Name the cold air (wind) shown in the sketch.	(1 x 1)	(1)
1.5.2	Give the concept that best describes an increase in temperature from **A** to **B**.	(1 x 1)	(1)
1.5.3	Identify the form of precipitation that will occur at **X**.	(1 x 1)	(1)
1.5.4	Explain how the precipitation mentioned in QUESTION 1.5.3 will form.	(1 x 2)	(2)
1.5.5	Provide TWO positive impact of this form of precipitation (answer to QUESTION 1.5.3) on farming on the valley floor.	(2 x 2)	(4)
1.5.6	Suggest how a farmer can adapt the farming techniques for the landscape in the sketch above.	(3 x 2)	(6)
			[60]

QUESTION 2: GEOMORPHOLOGY

Refer to drainage basins **A** and **B** below. Match the descriptions in QUESTIONS 2.1.1 to 2.1.7 with **A** or **B**. Write down only **A** or **B** next to the question numbers (2.1.1 to 2.1.7) in the ANSWER BOOK, e.g. 2.1.8 **A**.



[Source: https://www.google.com/search?q=drainage basin]

2.1.1 More surface run-off occurs.

2.1.2 Highly permeable rock is found.

2.1.3 The gradient is steep.

2.1.4 Lower stream order.

2.1.5 Sparse or less vegetation cover.

2.1.6 Little or soft rainfall occurs.

2.1.7 Clay soil is found in this area.

(7 x 1) (7)

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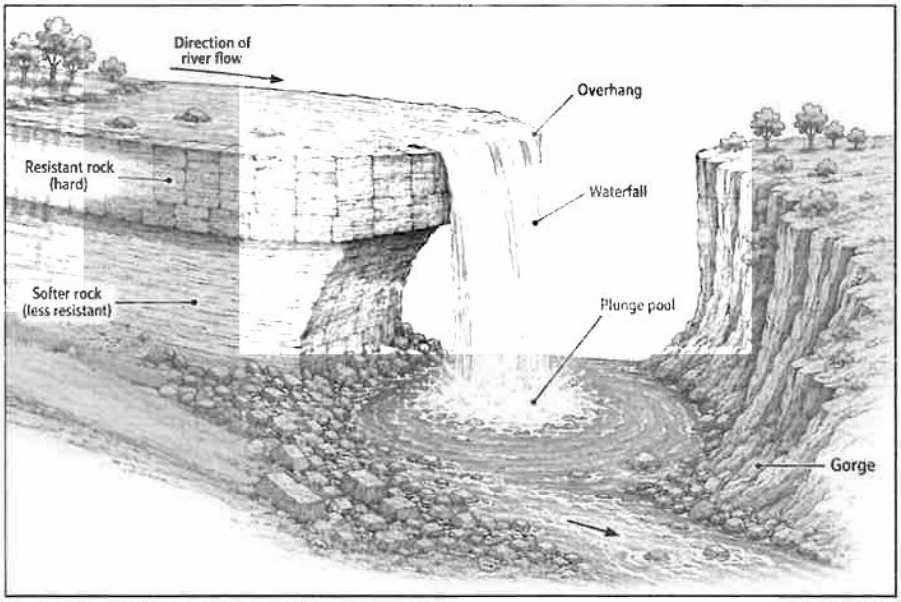
2.2. Choose the concept from COLUMN B that matches the geomorphological description in COLUMN A. Write only the letter next to the question numbers (2.2.1 to 2.2.8) in the ANSWER BOOK, e.g 2.2.9. I.

COLUMN A		COLUMN B	
2.2.1	Flat, natural feature next to a river.	A	Braided stream.
2.2.2	An embankment along the river where coarse material is deposited first.	B	Superimposed.
2.2.3	Type of slope that forms on the outer bank of a meander.	C	Delta.
2.2.4	When a meander loop becomes separated from the river.	D	Flood plain.
2.2.5	Stream with multiple channels and islands of sediment between the channels.	E	Meander.
2.2.6	A river that is younger than its course.	F	Levee.
2.2.7	A depositional landform that occurs when a river flows into the ocean.	G	Ox-bow lake.
2.2.8	Refers to a curve or bend along the course of a river.	H	Undercut slope.

(8 x 1) (8)

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2.3 The photograph below shows a waterfall.

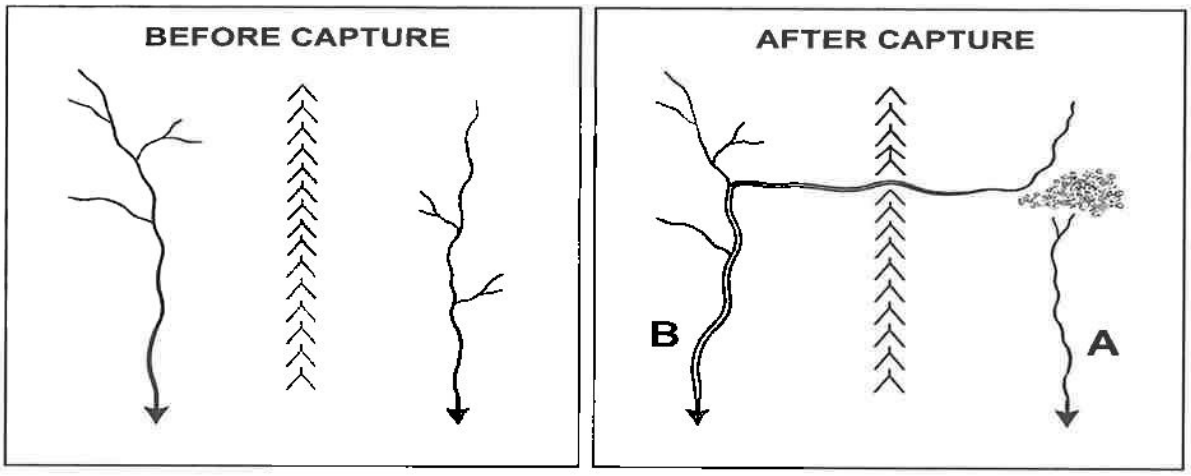


[Adapted from https://m.youtube.com/watch?v=N_ZC9vBX4Wo]

2.3.1	What is a *waterfall?*	(1 x 2)	(2)
2.3.2	Waterfalls are commonly found in the (**upper/lo**wer) course.	(1 x 1)	(1)
2.3.3	How is a waterfall different from a rapid?	(1 x 2)	(2)
2.3.4	How does erosion in the photograph above cause the waterfall to retreat (move) upstream?	(2 x 2)	(4)
2.3.5	Discuss the significance of waterfalls.	(3 x 2)	(6)

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2.4 The sketch below shows river capture.



[Source Examiner's own sketch]

2.4.1	Define the concept *river capture*.	(1 x 2)	(2)
2.4.2	State ONE condition necessary for river capture to occur.	(1 x 1)	(1)
2.4.3	Explain why River **B** will be rejuvenated.	(1 x 2)	(2)
2.4.4	Why is river **A** refered to as a misfit stream?	(1 x 2)	(2)
2.4.5	Explain the process that resulted in the formation of the misfit stream.	(2 x 2)	(4)
2.4.6	Discuss the negative impact of river capture on farming on the side of a misfit stream.	(2 x 2)	(4)

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2.5 Read the extract on pollution of Umkomaas river.

HEALTH CONCERNS AS RAW SEWAGE SPEWS INTO UMKOMAAS RIVER.

Sewage spills and blockages reported to the eThekwini call centre in recent times have mostly gone unattended, and the sewer department has reported malfunctioning of the structure.

Raw sewage overflows from a blocked manhole flowing into the Umkomaas River is a health risk. Since January 16, concerned residents have made numerous efforts to get the eThekwini Municipality to attend to it without success. Although it is not clear where the actual source of the overflow is, it is evident that blocked pipes are the cause, as the manhole is unable to handle the overflow.

Concerned residents escalated the matter to Cllr Jane Naidoo since the wind was blowing the smell across affecting food industry. "We have to look at environmental issues, consider implications on the community and the impact on tourism", said Brady Combrinck.

Sappi has committed to assist by removing the dense bush to allow access to the Umkomaas Treatment Works, which needs to be unblocked since the wastewater treatment works plants have experienced a systematic collapse due to the non-maintenance of the infrastructure, which is the root cause of these spills.

Adapted from: Rising Sun Newspapers, February 01, 2023.

2.5.1	Define the concept *river management*.	(1 x 2)	(2)
2.5.2	According to the extract, what pollutes the Umkomaas river?	(1 x 1)	(1)
2.5.3	What is the impact of pollution of Umkomaas river on people living nearby?	(1 x 2)	(2)
2.5.4	"Sappi has committed to assist by removing the dense bush to allow access to the Umkomaas Treatment Works, which needs to be unblocked". Explain how the removal of a dense bush will impact on pollution of the Umkomaas river.	(1 x 2)	(2)
2.5.5	In a paragraph of approximately EIGHT lines, suggest strategies the Ethekwini municipality could implement to reduce the risk of pollution entering the Umkomaas river.	(4 x 2)	(8)

[60]

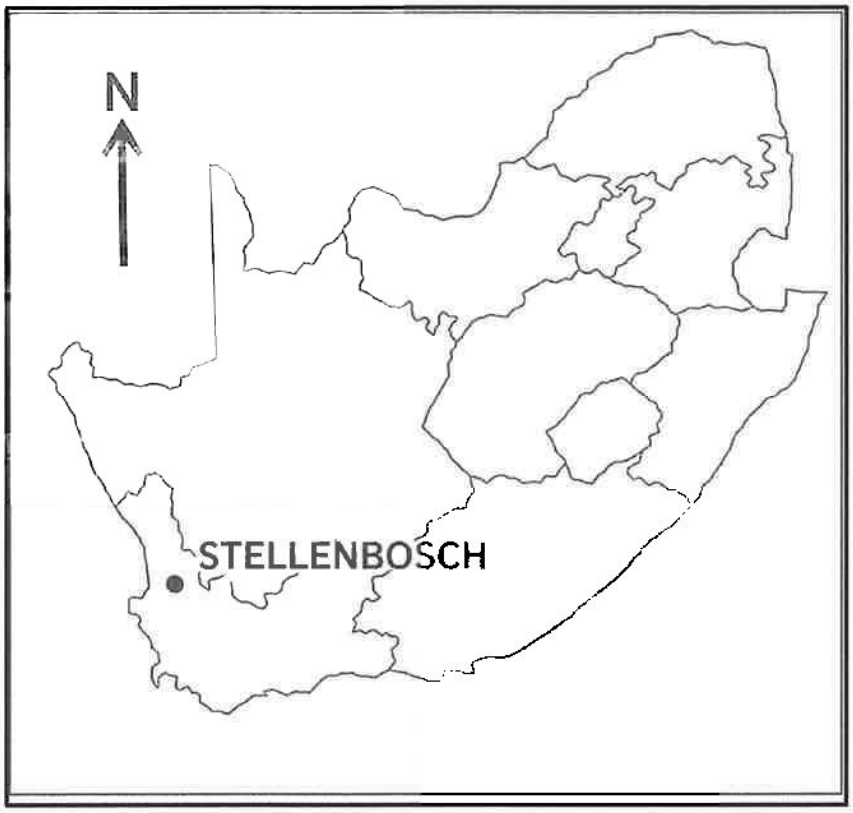
TOTAL SECTION A: 120

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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON STELLENBOSCH



Coordinates: 33°45′S; 18°45′E

Stellenbosch is located in a hilly, sheltered valley within the Cape Winelands, with an average elevation of 136 metres above sea level, surrounded by hills and mountains like Papegaaiberg, Stellenboschberg, and the Jonkershoek, Drakenstein and Simonsberg mountain ranges. It is situated approximately 50 kilometres east of Cape Town.

Stellenbosch has a Mediterranean climate with warm, dry summers and cool, rainy winters.

The Eerste River originates in the Jonkershoek Mountains, 60 kilometres east of Cape Town, and flows through the Jonkershoek Valley before reaching Stellenbosch.

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

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

ENGLISH	AFRIKAANS
River	Rivier
Nature reserve	Natuurreservaat
Mountain	Berg

3.1 MAP SKILLS AND CALCULATIONS

Refer to the topographical map.

3.1.1 Stellenbosch is located on the ... of Cape town

A. East
B. West
C. North
D. south (1 x 1) (1)

3.1.2 In the topographical map index **3318DD**, the **33** and **18** indicate ...

A. 33°N 18°W.
B. 33°S 18°E.
C. 33°W 18°N.
D. 33°E 18°S (1 x 1) (1)

Refer to trigonometrical station **F** in block **C3** and trigonometrical station **G** in block **D3**.

3.1.3 (a) Determine the true bearing of **F** from **G**. (1 x 1) (1)

(b) Calculate the magnetic bearing of **F** from **G**. Use the given information:
Mean annual change = 7′ West of True North
Formula:
Magnetic bearing = Magnetic Declination + True bearing (5 x 1) (5)

3.1.5 What is the purpose of correcting the magnetic declination? (1 x 2) (2)

3.2 MAP INTERPRETATION

Refer to the orthophoto map.

3.2.1 The dam in block **E1/E2** has a (darker/lighter) tone. (1 x 1) (1)

3.2.2 Compare temperature that will be experienced at area **8** in block **B2** with temperature that will be experienced in the surrounding built up area. (2 x 1) (2)

Refer to river **L** in block **C2** on a topographical map.

3.2.3 Name the type of erosion that is likely to occur at **L.** (1 x 1) (1)

3.2.4 Provide a reason to support your answer to QUESTION 3.2.3 above. (1 x 2) (2)

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3.2.5 In which direction does the river at **L** flow? (1 x 2) (2)

3.2.6 Give map evidence to support your answer to QUESTION 3.2.5 above. (1 x 2) (2)

3.2.7 Wind direction at area **J** on a topographical map is North. Give map evidence to support this statement. (1 x 2) (2)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.3.1 Area **9** in block **A3** on the orthophoto map is an example of (raster/vector) data. (1 x 1) (1)

3.3.2 Give one attribute data for the road marked **M** in block A3 on the topographical map. (1 x 2) (2)

Refer to the photograph of a river located in Stellenbosch



[Source: shutterstock.com]

3.3.3 Identify the data layer shown in the photograph. (1 x 1) (1)

3.3.4 Define the concept *buffering.* (1 x 2) (2)

3.3.5 How will buffering protect the quality of water in the river in the photograph above? (1 x 2) (2)

TOTAL SECTION B: 30

TOTAL MARKS: 150

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