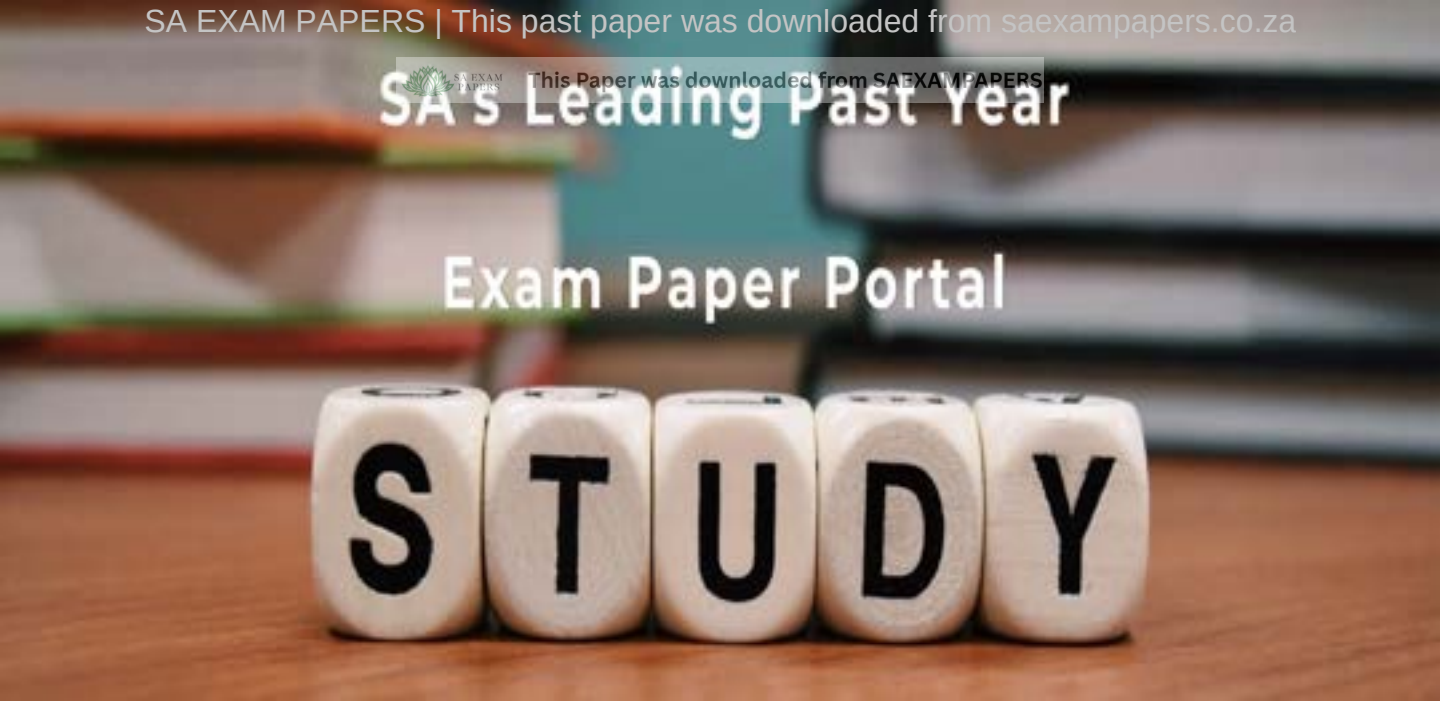


LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY PAPER 1

JUNE 2026

MARKS: 150

TIME: 3 hours

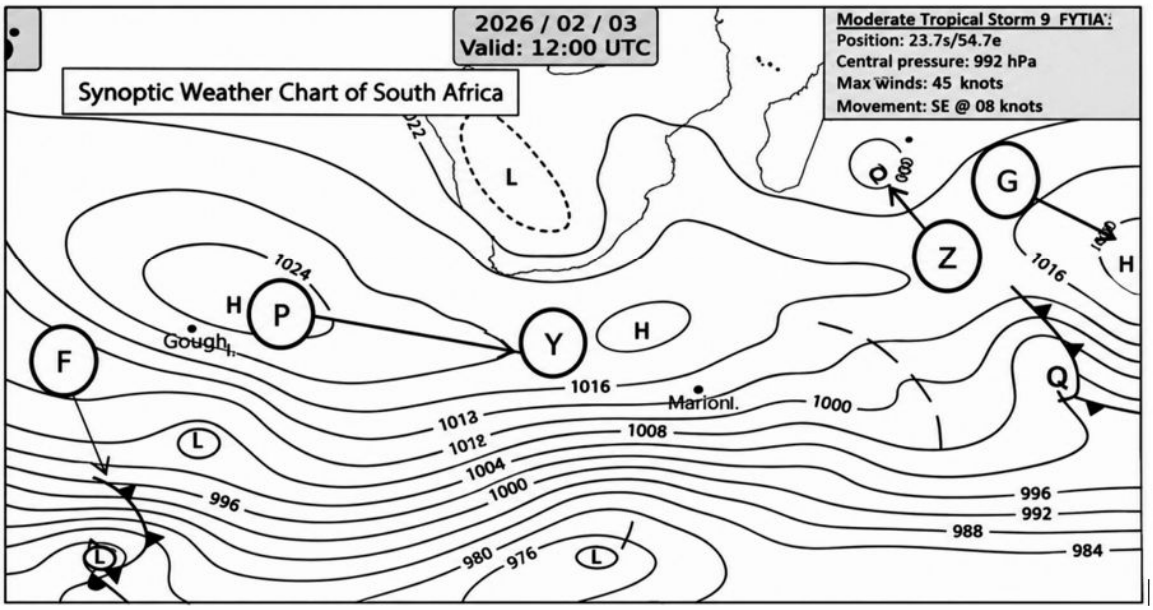
MYEGEOGP1

This question paper consists of 20 pages

SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

1.1 Refer to the synoptic weather map of South Africa below. 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 (1.1.1 to 1.1.8) in the ANSWER BOOK e.g. 1.1.9.



[Source:kooiasun.co.za/weather/sa-weather-chart.html]

1.1.1 The Synoptic weather chart above shows … season.

A. Autumn
B. Summer
C. Winter
D. Spring

1.1.2 The weather system at **Z** is known as …

A. Tropical cyclone
B. Mid-latitude cyclone
C. Anticyclone
D Coastal low

1.1.3 The shape of the isobars at **P – Y** represent …

A. Ridge
B. Trough
C. Front
D. Occlusion

1.1.4 The cold front at **F** is the leading edge of … air which forces the air ahead of it to …

(i) warm
(ii) cold
(iii) rise
(iv) subside

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

1.1.5 The isobaric interval on the synoptic weather map is …

A. 2 hPa
B. 6 hPa
C. 4 hPa
D. 8 hPa

1.1.6 The name of the weather system at **G** is …

A. South Indian Anticyclone
B. South Atlantic Anticyclone
C. Continental Anticyclone
D. Coastal low

1.1.7 The … cyclone at **F** on the above map moves from …

(i) Mid-latitude
(ii) Tropical
(iii) east to west
(iv) west to east

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

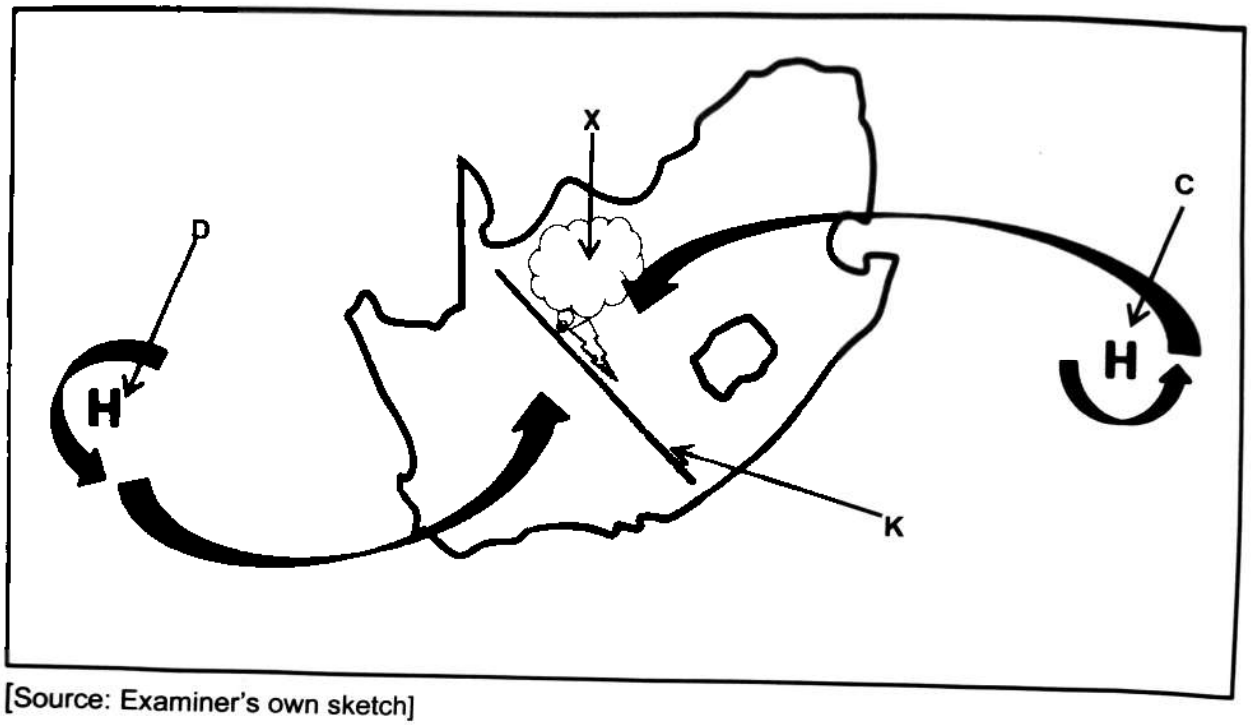
1.1.8 Air circulation around the anticyclone at **P** is … and the air is …

(i) Anticlockwise
(ii) Clockwise
(iii) Subsiding
(iv) Ascending

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

(8 x 1) (8)

1.2 Refer to the sketch of Moisture front and Line thunderstorms. Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter **Y** or **Z** next to the question numbers (1.2.1. to 1.2.7) in the ANSWER BOOK, e.g. 1.2.8 Z.



[Source: Examiner's own sketch]

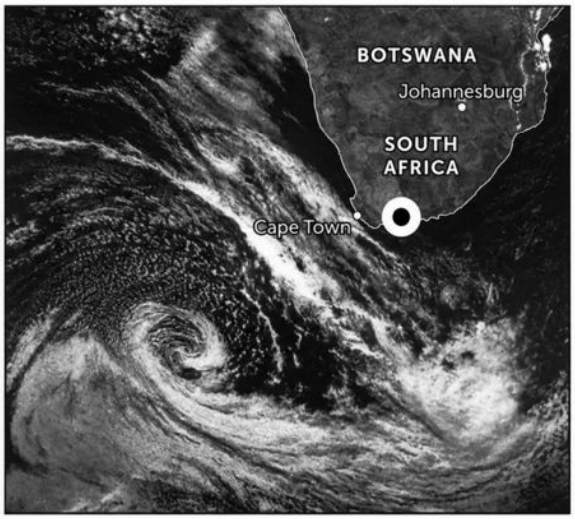
COLUMN A	COLUMN B
1.2.1 A zone between two air masses with different moisture content at **K**.	**Y**: Moisture front **Z**: Polar front
1.2.2 The season during which line thunderstorms occurs is ...	**Y**: Summer **Z**: Winter
1.2.3 One of the strategies to reduce the impacts of severe thunderstorm on the environment is ...	**Y**: Planting vegetation **Z**: Evacuation Plan
1.2.4 The air from **C** blows over the interior as ... wind.	**Y**: Cold - dry **Z**: Warm-moist
1.2.5 Type of cloud formed at **X** is called ...	**Y**: Nimbostratus **Z**: Cumulonimbus
1.2.6 High pressure cell **D** is located over ... ocean current.	**Y**: Cold **Z**: Warm
1.2.7 The positive impact of line thunderstorm on the natural environment is ...	**Y**: Degradation of the ecosystem **Z**: Replenishment of the ecosystem

(7 x 1) (7)

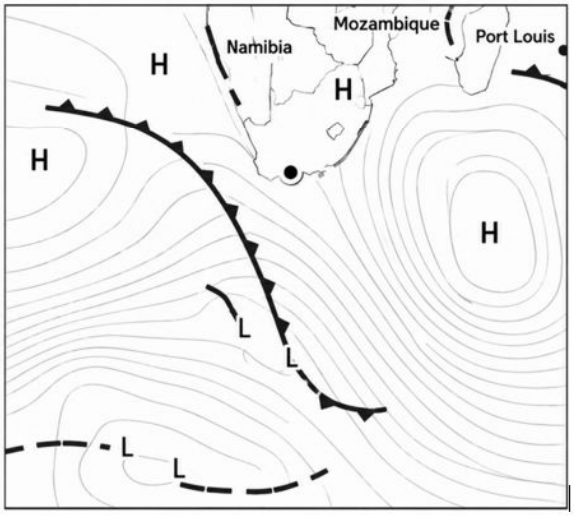
1.3 Refer to the infographic below on Mid-latitude cyclone.

A jaw-dropping mid-latitude cyclone with pressure plunging to 948 hPa is recorded on the 30 July 2025. This system is accompanied by steep upper air trough (jet stream that brings unstable, cold air). The cold front will hit south-west of Cape Town later in the afternoon with isolated to scattered showers and possibility of heavy rain together with thunderstorms.

Picture A



Picture B



[Source: https://www.google.co/search?]

1.3.1 In which hemisphere was satellite image **A** captured? (1 x 1) (1)

1.3.2 Give a reason to support your answer to QUESTION 1.3.1 (2 x 1) (2)

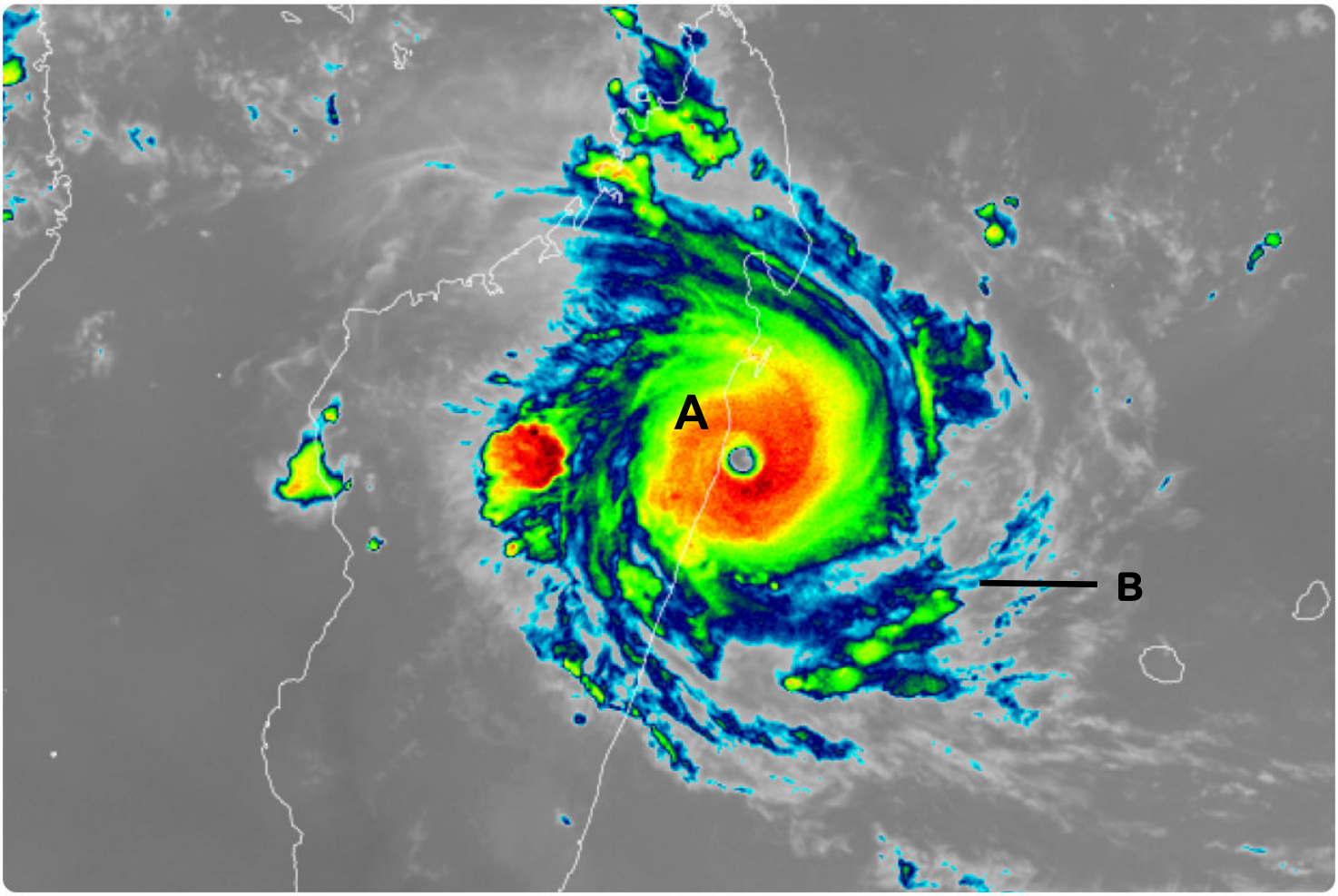
1.3.3 Refer to picture **B** in the infographic. Draw a fully labelled plan view of the system as captured. Clearly indicate the following:

(a) Cold front
(b) Warm front
(c) Warm sector/Cold sector
(d) Correct plan view (4 x 1) (4)

1.3.4 Explain negative physical environmental impacts of the mid-latitude cyclone on Cape Town. (2 x 2) (4)

1.3.5 Suggest pre-cautionary strategies that tourists can implement to avoid negative impacts of Mid-latitude cyclone in Cape Town. (2 x 2) (4)

1.4. Refer to the satellite image below of tropical cyclone Gezani.



1.4.1 Name feature **A** in the satellite image. (1 x 1) (1)

1.4.2 Why is the centre of the feature labelled **A** cloudless. (1 x 2) (2)

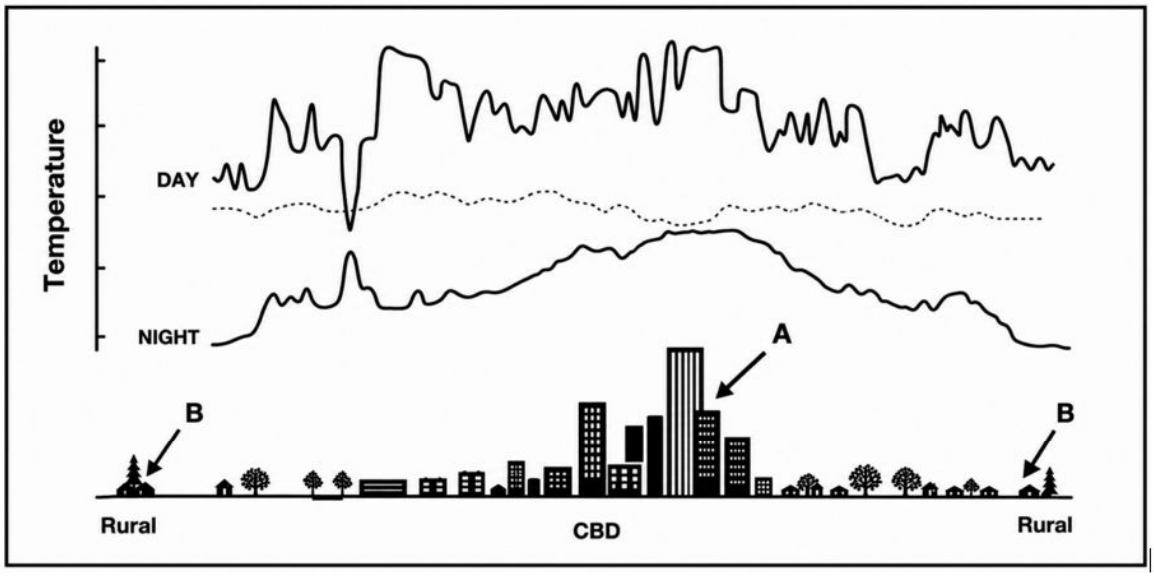
1.4.3 Explain the importance of the Coriolis force in the formation of a tropical cyclone.

1.4.4 Why do the clouds at **B** continue to increase in size? (1 x 2) (2)

1.4.5 Explain why the cyclone would dissipate over Mozambique. (1 x 2) (2)

1.4.6 Evaluate the negative physical environmental impacts of tropical cyclone over Mozambique. (2 x 2) (4)

1.5 Refer to the sketch below based on urban heat island profile of South African Cities.



[Source: adopted from researchgate.net]

1.5.1 Define the concept *urban heat island*. (1 x 2) (2)

1.5.2 Area **(A / B)** of the city records the highest temperature during the day.

(1 x 1) (1)

1.5.3 Explain your answer to QUESTION 1.5.2 (1 x 2) (2)

1.5.4 What are the impacts of urban heat island on the physical environment?

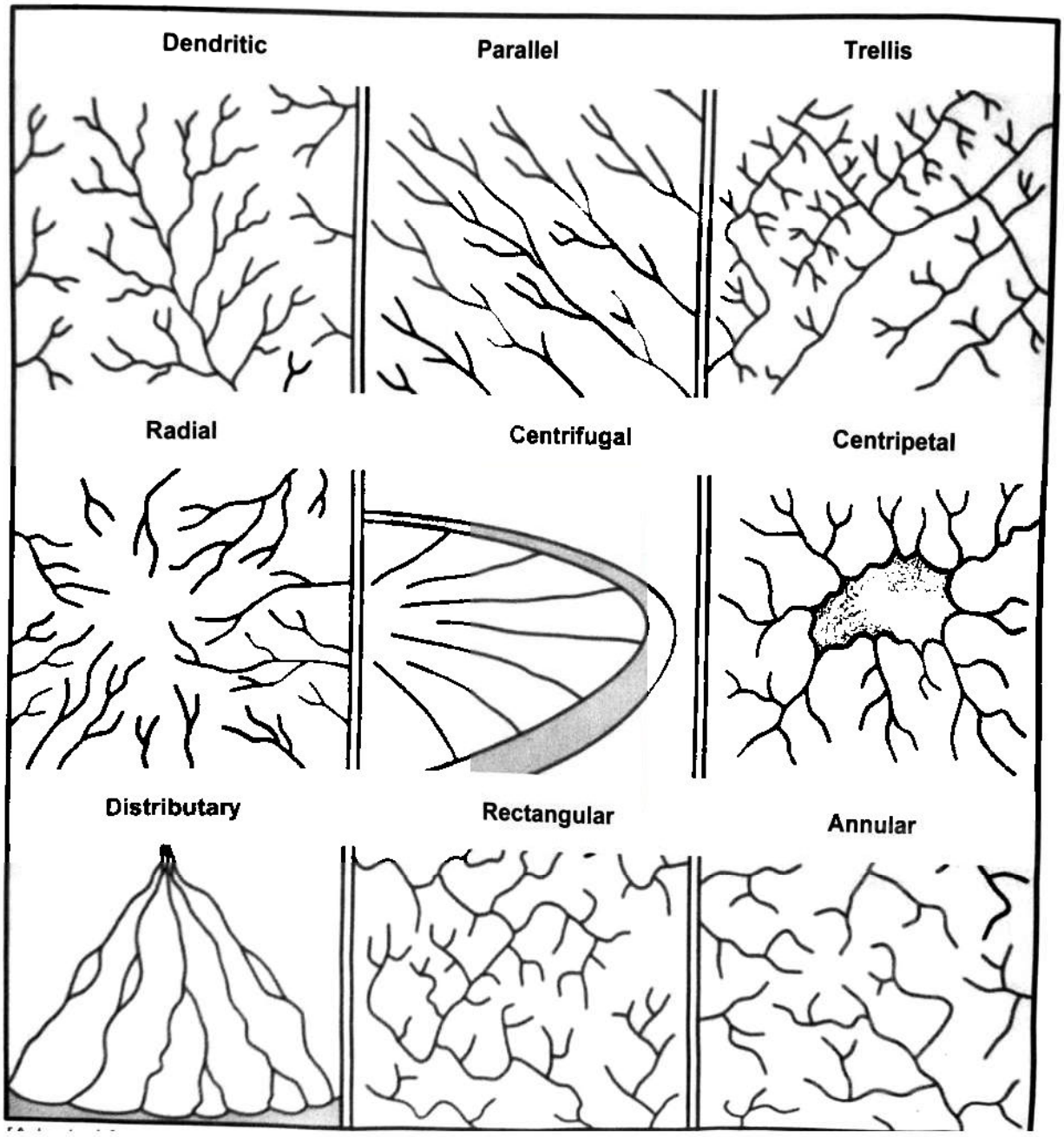
(2 x 2) (2)

1.5.5 In a paragraph of approximately EIGHT lines explain the strategies that can be implemented to reduce the effects of urban heat island. (4 x 2) (8)

[60]

QUESTION 2: GEOMORPHOLOGY

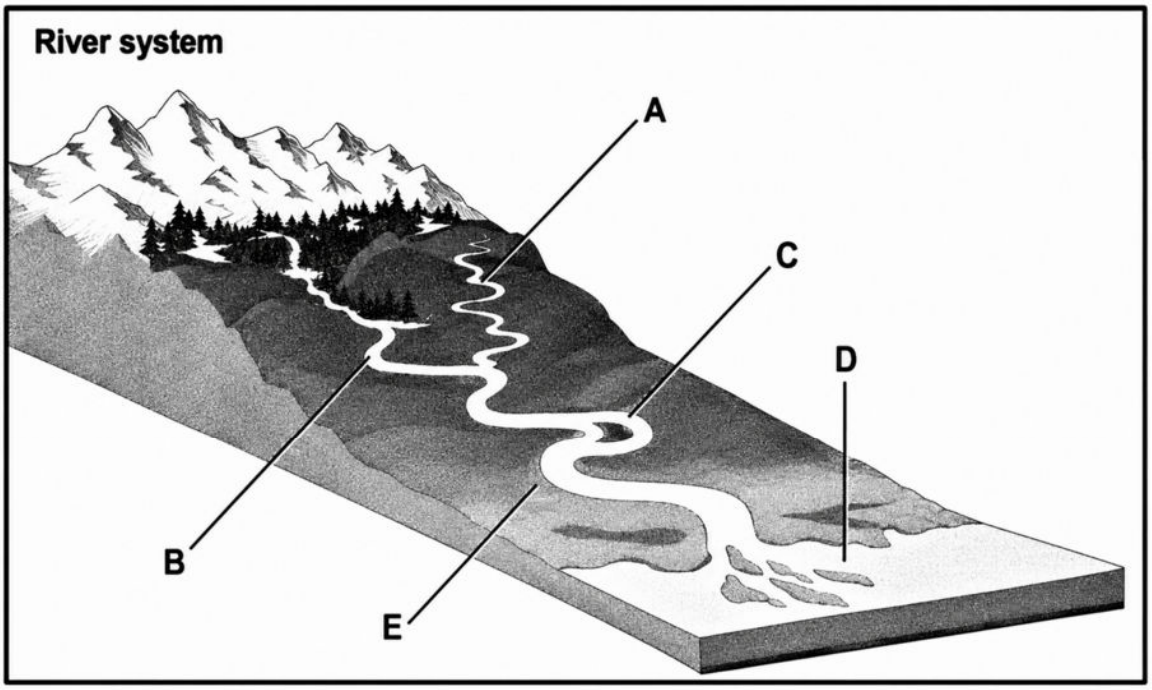
2.1 Refer to the sketch below which is based on Drainage patterns. Match the statements in COLUMN A with the correct options in COLUMN B. Write only **Y** or **Z** next to the question numbers (2.1.1 to 2.1.7) in the ANSWER BOOK e.g. 2.1.8 A



COLUMN A	COLUMN B
2.1.1 The tributaries join the mainstream at 90° bends.	**Y**: Rectangular **Z**: Parallel
2.1.2 The underlying rock structure is uniform and has equal resistance to erosion.	**Y**: Deranged **Z**: Dendritic
2.1.3 Rivers flow towards a central point or depression.	**Y**: Radial centripetal **Z**: Radial centrifugal
2.1.4 Streams and rivers flow parallel to each other in the same direction.	**Y**: Parallel **Z**: Dendritic
2.1.5 Develops in areas with folded sedimentary rocks of varied resistance to erosion	**Y**: Rectangular **Z**: Trellis
2.1.6 A haphazard pattern developed from a disruption of a pre-existing drainage pattern	**Y**: Dendritic **Z**: Deranged
2.1.7 It develops from a central point such as dome or a volcano	**Y**: Radial centrifugal **Z**: Radial centripetal

(7 X 1) (7)

2.2 Refer to the sketch below based on longitudinal profile. 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 ASWER BOOK e.g. 2.1.9 E.



2.2.1 The side view of a river from the source to the mouth …

A. Cross profile

B. River profile

C. Longitudinal profile

D. Fluvial process

2.2.2 The valley of the river profile at **A** is …

A. V-shaped and narrow

B. open V-shaped

C. very wide and gentle

D. wide and flat

2.2.3 A curve or bend at **B** in the river course is called …

A. waterfall

B. flood plain

C. meander

D. ox-bow lakes

2.2.4. The outer bank of the meander at **C** is called… and is associated with...

(i). slip-off slope

(ii). under-cut slope

(iii). deposition

(iv). erosion

A. (i) and (iii)

B (ii) and (iii)

C (i) and (iv)

D (ii) and (iv)

2.2.5. River deposits at **D** lead to the formation of…

A. flood plain

B. delta

C. natural levees

D. rapids

2.2.6. The meander loop at **E** is called …

A. meander scars

B. ox-bow lake

C. channel cut-off

D. tributary

2.2.7 A river in the lower course has …

(i) higher velocity

(ii) lower velocity

(iii) high volume of water

(iv) low volume of water

A. (i) and (iii)

B. (i) and (ii)

C. (ii) and (iv)

D. (ii) and (iii)

2.2.8 The benefits of a natural levee on the physical environment are …and ...

(i) increased soil fertility

(ii) decreased soil fertility

(iii) boost the natural habitat

(iv) destroy the biodiversity

A. (i) and (ii)

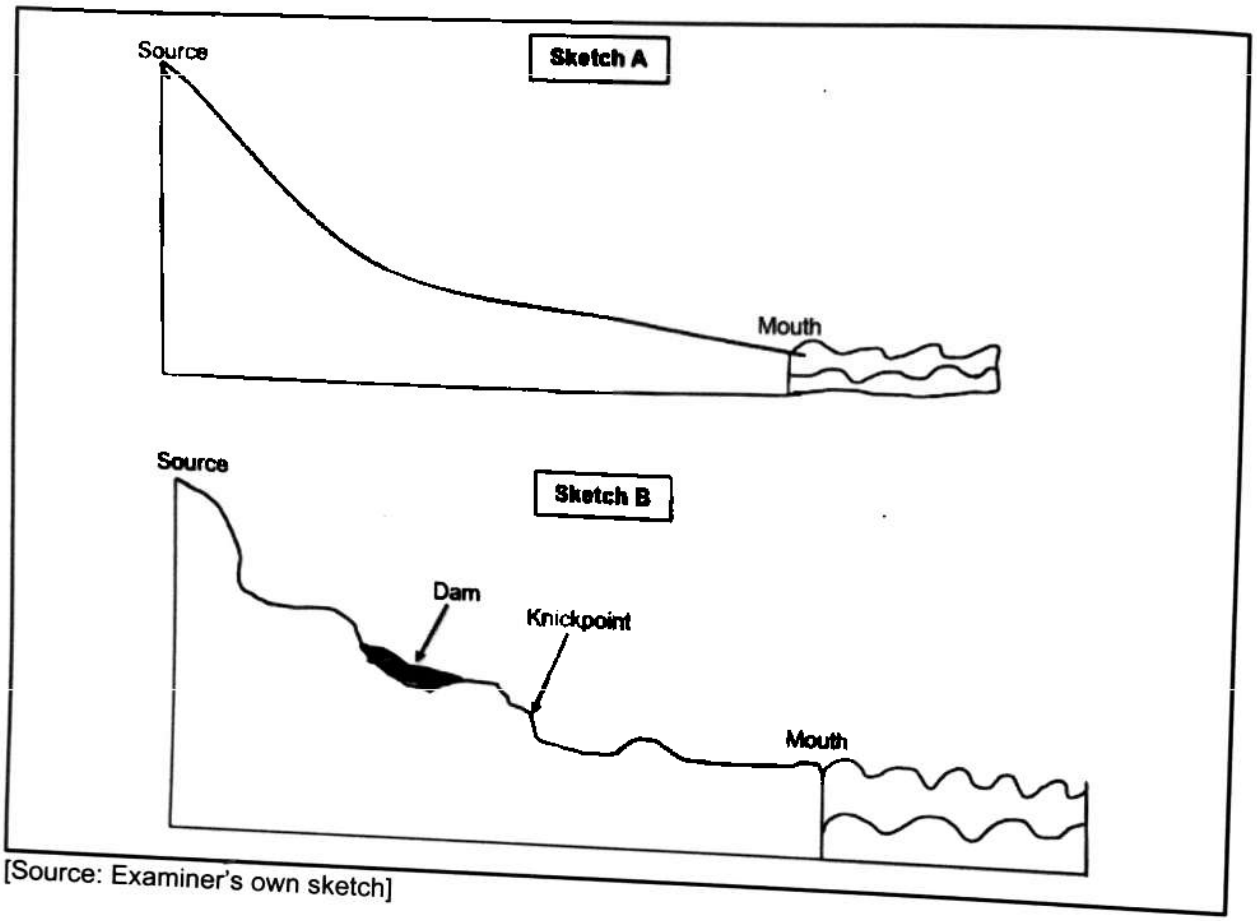
B. (i) and (iii)

C. (ii) and (iii)

D. (ii) and (iv)

(1 x 8) (8)

2.3 Refer to the sketch **A** and **B** below illustrating *River grading*.



[Source: Examiner's own sketch]

2.3.1 Define the concept *river grading*. (1 x 2) (2)

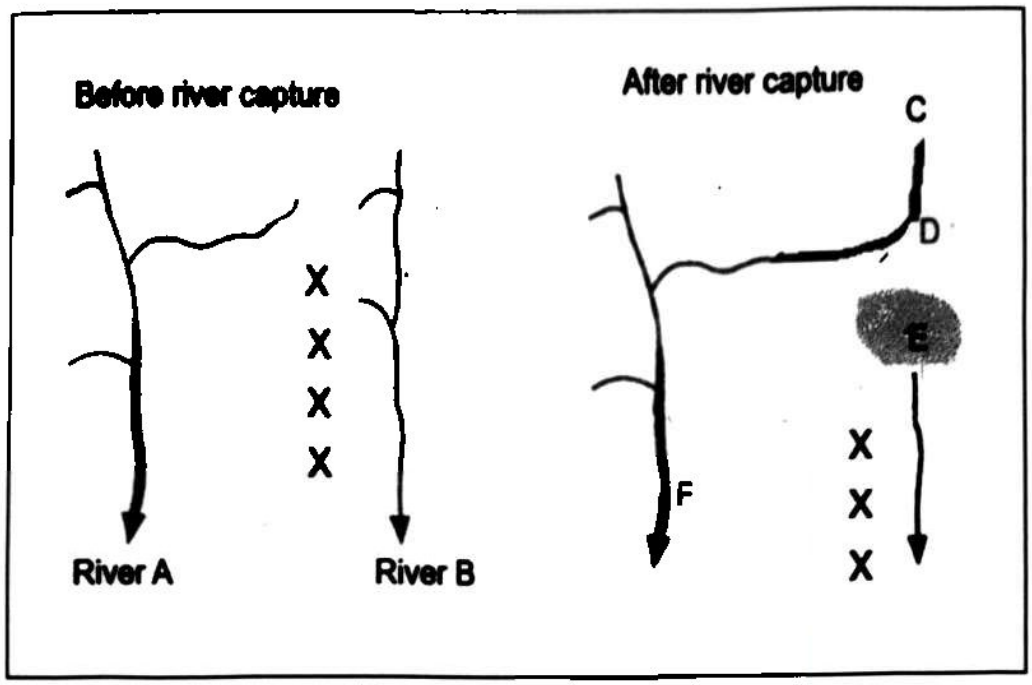
2.3.2 Identify two temporary base levels in sketch **B** (2 x 1) (2)

2.3.3 Which one between **A** and **B** is an ungraded profile (1 x 1) (1)

2.3.4 Motivate your answer to QUESTION 3.3.3 (1 x 2) (2)

2.3.5 In a paragraph of approximately EIGHT lines, explain how different processes change an ungraded profile into a graded profile. (4 x 2) (8)

2.4 Refer to sketches below showing river capture/stream piracy.



[Source: Examiner's own sketch]

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

2.4.2 The process in which a watershed changes its position during river capture is called ... (1 x 1) (1)

2.4.3 Why does head-ward erosion occurs in the upper course? (1 x 2) (2)

2.4.4 How does river capture affect the captured stream? (1 x 2) (2)

2.4.5 Label features **D** and **E** of the river after capture. (2 x 1) (2)

2.4.6 Explain how River **A** managed to capture the headwaters of river **B.** (1 x 2) (2)

2.4.7 Explain the negative impacts of the captured river on the physical environment. (2 x 2) (4)

2.5 Refer to sketch below on catchment and river management

INFORMAL SETTLEMENTS ALONG CATCHMENT AREAS

The Amathole District Municipality reported spilling of two sewage pumps into Gcuwa River for the past eight years due to poor services and maintenance of infrastructure. The pipes have not yet repaired as informal settlements residents continue to connect power illegally. The digging of grounds to fit illegal wires makes the situation worse as the community damage sewage pipes. Heavy rainfall and floods over the area seem to render the situation unmanageable.

[Source: dailymaverick.co.za/article/2024-08-12-eight-years-and-counting-raw-sewage-pouring-continuously-into-butterworth-river/]

2.5.1 Define the concept *river management*. (1 x 2) (2)

2.5.2 How long did Butterworth municipality live with sewage pouring into the river? (1 x 1) (1)

2.5.3 What causes sewage to pour into Gcuwa River? (1 x 2) (2)

2.5.4 Explain the negative impacts of informal settlements along catchment areas. (2 x 2) (4)

2.5.5 Suggest measures that can be taken to ensure sustainability of the catchment areas. (3 x 2) (6)

[60]

TOTAL SECTION A: 120

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON GRAAFF REINET (SOUTH)

Coordinates: 32°15' S; 24°30' E

Graaff-Reinet is a town in the Eastern Cape Province of South Africa. It is the oldest town in the province and the sixth oldest town in South Africa, after Cape Town, Stellenbosch.

The town is home to a number of tourist attractions, including the Dutch Reformed church in the town, which is a prominent stone building with seating to accommodate 1,500 people. Sites such as The Valley of Desolation, Camdeboo National Park and the Reinet House Museum, a Cape Dutch building, formerly the Dutch Reformed Church parsonage.

Graaff-Reinet receive rainfall throughout the year and mostly in February during autumn. It is hot in summer and winters are short, cold, dry and windy. Over the course of the year, the temperature typically varies from 41°F to 92°F and is rarely below 35°F or above 102°F.

[Adapted from https://en.wikipedia.org/wiki/Graaff-Reinet]

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

ENGLISH	AFRIKAANS
Diggings	Uitgrawings
River	Rivier

3.1 MAP SKILLS AND CALCULATIONS

3.1.1 The height of the trigonometric beacon in block **A1** is …

A. 87

B. 20

C. 1317, 7

D. 1797, 6 (1 x 1) (1)

3.1.2 The co-ordinates of the windpump in block **G4** is …

A. 32°18'10" S and 24°31'30" E

B. 24°31'28" S and 32°18'**39"E**

C. 32°19'39" E and **24°32'29" S**

D. **24°32'29" S and 32°19'**39" E (1 x 1) (1)

3.1.3 **Calculate the** magnetic **bearing** of trigonometric beacon 89 in block **C9** from **trigonometric** beacon 90 in block **E3.**

Formula: **Magnetic bearing = True bearing + magnetic declination.** Show all calculations (6 x 1) (6)

3.1.4 The contour interval of orthophoto map 3224BC GRAAF-REINET is … (5 / 20) metres above sea level (1 x 1) (1)

3.1.5 Graaff-Reinet receives … (Summer/Winter) rainfall (1 x 1) (1)

3.2. MAP INTERPRETATION

Refer to block **J9** of the topographic map

3.2.1 State the direction in which Sondags river in block **F6 – G6** is flowing. (1 x 1) (1)

3.2.2. (a) Graaf-Reinet receives … (more or less) annual rainfall (1 x 1) (1)

(b) Provide evidence from the topographic map to support the answer in QUESTION 3.2.2 (a) (1 x 1) (1)

3.2.3 (a) Differentiate the gradient of the slope at **B** in block **E3** and **C** in block **H4** on the topographic map. (2 x 1) (2)

(b) Explain your answer in QUESTION 3.2.2 (a) (1 x 2) (2)

3.2.4 Refer to the orthophoto map.

(a) Compare the differences in daytime temperatures between block **A4** and block **D4.** (1 x 2) (2)

(b) Give a reason for the answer to QUESTION 3.2.3 (a) (1 x 2) (2)

3.3. GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.3.1 State the attributes of the road that passes through block **A4-C5** of the orthophoto map. (1 x 1) (1)

3.3.2 The buildings in block **H4** of the topographical map are recorded as…

A polygon
B grid
C line
D points (1 x 1) (1)

3.3.3 The resolution of the orthophoto is high. Explain why that is the case. (1 x 2) (2)

Refer to the topographic map

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

3.3.5 Explain how buffering can be a solution to the problems of water pollution in *Sondagsriver.* (1 x 2) (2)

TOTAL SECTION B: [30]

GRAND TOTAL: 150