# SMARTWIZ

## GRADE11 GEOGRAPHY EXAM

**MARKS: 100**

| MARKS | |
|---|---|

**TIME: 2 HOURS**

**SCHOOL** _____

**CLASS (eg. 4A)** _____

**SURNAME** _____

**NAME** _____

**Instructions for Learners:**

- Read all instructions carefully before you begin the exam.
- Write your full name and student number clearly on the answer sheet/book.
- Answer all questions unless otherwise instructed.
- Show all your work/calculations where necessary.
- Write neatly and clearly.
- Use only a blue or black pen. Do not use correction fluid or tape.
- Electronic devices (calculators, cell phones, etc.) are not allowed unless explicitly permitted.
- Raise your hand if you have any questions.
- Do not talk to other learners during the exam.
- Any form of dishonesty will result in immediate disqualification from the exam.

**This exam consists of five pages, including the cover page.**

# QUESTION 1: CLIMATOLOGY – MID-LATITUDE CYCLONES (15 MARKS)

1.1 What is a mid-latitude cyclone?

_____ (2)

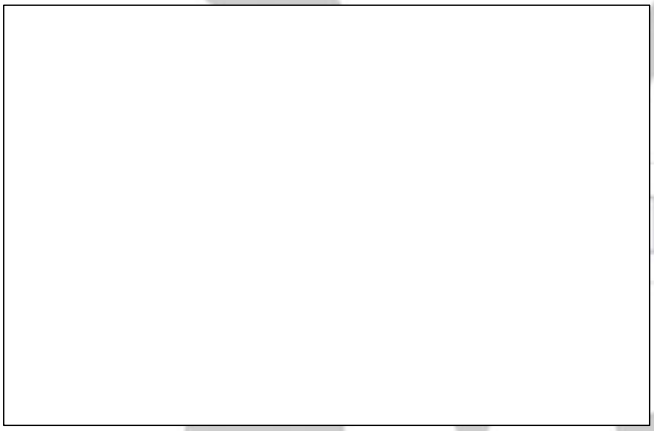
1.2 In which belt of pressure do mid-latitude cyclones form?

_____ (1)

1.3 Name **two weather conditions** commonly associated with the cold front of a mid-latitude cyclone.

1. _____
2. _____ (2)

1.4 Use the synoptic map symbols to draw a cold front and a warm front. Label each clearly.



(4)

1.5 Explain how a mid-latitude cyclone affects farming in South Africa.

_____ (3)

1.6 Name **one satellite image type** used to study weather systems.

_____ (1)

1.7 Give **two ways** farmers can prepare for incoming cold fronts.

1. _____
2. _____ (2)

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# QUESTION 2: GEOMORPHOLOGY – DRAINAGE SYSTEMS (20 MARKS)

2.1 Define the term **drainage basin**.

_____ (2)

2.2 Label the following drainage pattern:
(Diagram provided in paper:)

a) Type of drainage pattern: _____ (1)
b) One reason for this pattern: _____ (2)

2.3 Explain **two** characteristics of a youthful river.

1. _____
2. _____ (4)



2.4 Study the river profile diagram provided and answer:

a) Identify the upper, middle, and lower course of the river on the diagram:
Upper: _____
Middle: _____
Lower: _____ (3)

b) State one landform typically found in the upper course:
_____ (1)

2.5 Describe one human impact on river systems in urban areas.

_____

_____ (2)

2.6 What is river rejuvenation? Briefly explain one cause.

_____

_____ (2)

2.7 Name one example of a river system in South Africa.
_____ (1)

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# QUESTION 3: MAP SKILLS – TOPOGRAPHICAL MAP INTERPRETATION (25 MARKS)

**Use the topographical map and orthophoto map provided.**


3.1 What is the scale of the topographical map?
_____ (1)

3.2 Calculate the distance (in km) between point A and B using the map scale. Show all calculations.
Distance: _____ (4)

3.3 Identify the land-use zone shown in grid square D3.
_____ (2)

3.4 Calculate the gradient between the trig beacon at 780 m and the river point at 600 m over a horizontal distance of 2 km.
Formula: Gradient = Vertical interval ÷ Horizontal distance
_____ (4)

3.5 Give **one natural** and **one artificial** feature visible on the orthophoto map:
Natural: _____
Artificial: _____ (2)

3.6 What is the direction from the school in E2 to the church in E4?
_____ (2)

3.7 Explain the likely impact of urban development on the natural vegetation in the area.

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_____ (3)

3.8 Give one advantage of using orthophoto maps over topographic maps.
_____ (1)

3.9 State two ways the contour lines on a topographic map show steep slopes.

1. _____
2. _____ (2)

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# QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS) (10 MARKS)

4.1 What is GIS?

_____

_____ (2)

4.2 List **two components** of GIS.

1. _____
2. _____ (2)

4.3 Name **two uses** of GIS in everyday life.

1. _____
2. _____ (2)

4.4 Distinguish between **spatial** and **attribute** data.

_____

_____ (2)

4.5 What is layering in GIS?
_____ (2)

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✅ **TOTAL: 100 MARKS**

**MEMO**

# QUESTION 1: CLIMATOLOGY – MID-LATITUDE CYCLONES (15 MARKS)

1.1 A mid-latitude cyclone is a large low-pressure system that forms in the westerlies and brings unsettled weather. (2)

1.2 The **westerly wind belt** / **mid-latitudes** (1)

1.3

1. Heavy rain
2. Drop in temperature / thunderstorms / strong winds (Any 2 × 1) = (2)

1.4 Correct drawing with:

- Cold front (blue line with triangles)
- Warm front (red line with semi-circles)
- Labels (cold front and warm front)
  (2 marks for each front, correctly drawn and labelled) = (4)

1.5 It may bring rain needed for crops but can also cause floods, soil erosion, or delays in harvesting. (3)

1.6 Infrared satellite image / visible light image / weather satellite (Any 1) (1)

1.7

1. Harvesting crops early
2. Reinforcing structures or covering crops (Any reasonable answers) (2)

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# QUESTION 2: GEOMORPHOLOGY – DRAINAGE SYSTEMS (20 MARKS)

2.1 The drainage basin is the area of land drained by a river and its tributaries. (2)

2.2
a) Dendritic (1)
b) Formed on uniform rock / gentle slope / consistent rock type (2)

2.3

1. Steep gradient
2. V-shaped valley / high energy / vertical erosion (2 × 2) = (4)

2.4
a)
Upper: A
Middle: B
Lower: C (3)

b) Waterfall / interlocking spur / rapids (Any valid landform) (1)

2.5 Dumping waste, canalisation, construction, pollution (Any valid human impact) (2)

2.6 River rejuvenation is when a river gains renewed energy and starts eroding downward again. Caused by sea-level drop or land uplift. (2)

2.7 Example: Orange River / Vaal River / Limpopo River / Tugela River (Any correct example) (1)

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# QUESTION 3: MAP SKILLS – TOPOGRAPHICAL MAP (25 MARKS)

3.1 1:50 000 (1)

3.2 (Example based on hypothetical points – adjust if map is provided)
Distance in cm × 0.5 (scale) = answer in km
e.g., 6 cm × 0.5 = **3 km** (1 for method, 3 for correct calc.) (4)

3.3 CBD / residential zone / industrial zone (depending on map) (2)

3.4
Gradient = 180 m ÷ 2 000 m = **1 : 11.1** or simplified ratio (4)

3.5
Natural: River / hill / forest
Artificial: Road / dam / building (2)

3.6 East / North-East / any correct compass direction (2)

3.7 Urban development reduces vegetation cover, leading to erosion, biodiversity loss, and habitat destruction. (3)

3.8 More detail / photographic representation / real-time features (1)

3.9

1. Contours are close together
2. Sharp elevation changes / steep gradients shown (2)

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# QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS) (10 MARKS)

4.1 GIS is a computer-based system used to capture, store, analyze, and display spatial data. (2)

4.2

1. Hardware
2. Software / data / people / procedures (Any 2) (2)

4.3

1. Urban planning
2. Navigation / tracking / disaster management / environmental monitoring (Any 2) (2)

4.4
Spatial data: location-related (e.g., coordinates)
Attribute data: descriptive (e.g., name, type, population) (2)

4.5 Layering is stacking different types of data (roads, rivers, elevation) in GIS to analyze them together. (2)



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✅ **TOTAL: 100 MARKS**