education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

PROVINCIAL ASSESSMENT

GRADE 12

GEOGRAPHY P1

JUNE 2024

MARKING GUIDELINES

POINTS: 150

These marking guidelines consist of 10 pages.

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QUESTION 1: CLIMATE AND WEATHER

1.1 1.1.1 A
1.1.2 C
1.1.3 C
1.1.4 A
1.1.5 A
1.1.6 B
1.1.7 A
1.1.8 A (8 x 1) (8)

1.2 1.2.1 Z
1.2.2 Z
1.2.3 Z
1.2.4 Z
1.2.5 Y
1.2.6 Y
1.2.7 Z (7 x 1) (7)

1.3**Refer to the sketch below about line thunderstorms.**

1.3.1 A boundary between two air masses with different moisture contents. (2)

1.3.2 (a) Warm Mozambique Current (1)

A candidate must specify that this is the warm Mozambique current.
No mark should be awarded for a candidate who wrote Only Mozambique stream

(b) Warm. Mozambique Current is responsible for higher temperatures over the eastern half of South Africa (2)
The moist air over the Indian Ocean brings high rainfall to the eastern half of South Africa. (2) (1 x 2) (2)
[ANY ONE]

1.3.3 The air is warm and humid. (2)
The air is less dense because it is warm. (2) (2 x 2) (4)

1.3.4**In the summer**

Low pressure system over the interior during the summer, draws moisture from the oceans to the land (2)
Inversion layer above escarpment in summer allows inflow of moist air (2)
Increased convergence of air masses from well-developed high pressure along the coast (2)
Weakened Kalahari High Pressure System facilitates greater vertical rise in the interior (2)
Presence of trough over the interior during the summer (2)

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In the winter 3 x 2)6)
Dominance of the Kalahari High Pressure System over the interior in winter results in strong influx of cold air (2)
Inversion layer under escarpment in winter prevents moist air from flowing into the central plateau (2)
Dry and cloudless conditions are experienced over the interior during the winter (2)

[ANY THREE, CANDIDATES MUST NAME BOTH SEASONS, WINTER AND SUMMER]

[15]

1.4 1.4.1 35°C (1)

No mark should be awarded for candidates who did not write °C.

1.4.2 This is due to the building materials (use examples) used in urban areas. (2)
This is due to infrastructure such as roads. (2)
This is due to lack of vegetation. (2) Due to high building density (2)
Due to tall buildings (2)
This is due to human activities in an urban area. **[ANY ONE]** (2)

1.4.3 Heat trapped between buildings due to high building density (2) Tall buildings prevent wind from removing heat from the city (2)
Early in the morning/late afternoon, sun rays hit buildings at an angle of 90° and concentrate heat on the buildings (2)
Materials used to build tall buildings absorb more heat (2) More heat is trapped inside the buildings (2)
[EMPHASIS ON TALL BUILDINGS] [ANY ONE] (1 x 2) (2)

1.4.4 Urban heat island occurs during the day due to high temperatures, it has a larger vertical dimension and is not well defined (2) while pollution dome is strongly developed at night due to lower temperatures and falling air, it is well defined and compressed over the City. (2)
(2 x 2) (4)

1.4.5 Plant more trees in urban areas to absorb carbon dioxide. (2) Construction of rooftop gardens. (2) Use of white reflective paint or surfaces to prevent heat absorption. (2) Commercial decentralization to move shoppers/workers to remote areas. (2) Industrial decentralization to prevent pollution in cities. (2) Restrict industrial activities to daytime only. (2) Legislation to limit pollution. (2) Chimney stacks high enough to release smoke above the inversion layer. (2) Increase the number of water features. (2) Promote public transport to reduce the number of vehicles in the CBD. (2) Increase eco-friendly buildings. (2)

[ANY THREE] (3 x 2) (6)

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1.5 1.5.1 Winter **(1)**

1.5.2 (10/12/13) June/ Date (1)
Cold fronts in the interior of the Western/Eastern Cape (1) High amounts of rainfall in the south-western part of SA (1)
Significant drop in temperature (1)
[ANY ONE] (1 x 1) (1)

1.5.3 Northward movement of the high pressure belts (anti-cyclones) / ITCS (2) (1 x 2) (2)

1.5.4 Shrinkage (1)

1.5.5 The wind direction associated with the cold front will change from northwest to southwest as the front moves over the Western Cape.

1.5.6**Positive:**
Brings much-needed moisture to the soil (2)
Biodiversity/ecosystem/habitat restoration (2) Water available for wildlife (2)
Water available for growth of natural vegetation (2)
Water provides for more pasture/veld (2)
Recharge (through infiltration) natural aquifers/springs/groundwater (2)
Recharge rivers (via surface runoff) (2)

Negative:
(Low-lying) areas will be flooded (2) Soil erosion will increase (2)
Destruction of biodiversity/ecosystem/habitat (2)
Damage to natural vegetation (2)
Loss of wildlife (2)
Increased salinization of rivers (2) Saturation of soil (waterlogged conditions) (2) Rockfalls/mass movements on steeper slopes (2)
[ANY FOUR, ANSWERS MUST REFER TO BOTH POSITIVE AND NEGATIVE] (4 x 2) (8)
[60]

QUESTION 2 GEOMORPHOLOGY

2.1 2.1.1 A
2.1.2 C
2.1.3 B
2.1.4 C
2.1.5 B
2.1.6 A
2.1.7 A
2.1.8 A (8 x 1) (8)

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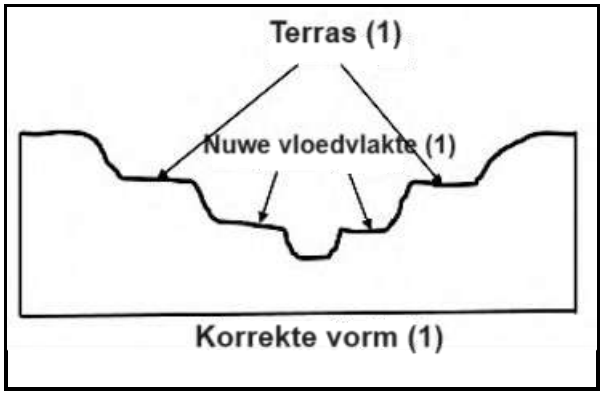
2.2 2.2.1 Y
2.2.2 Y
2.2.3 Y
2.2.4 Z
2.2.5 Y
2.2.6 Y
2.2.7 Y (7 x 1) (7)

2.3 2.3.1 A process where a river recovers energy (and begins to erode vertically/ downwards again) (2) (1 x 2) (2)

2.3.2 After river capture, the stream recovers energy, therefore it undergoes rejuvenation. (2) Captor River will have high flow velocity and high erosion capacity. (2) The catchment stream will also experience an increase in the volume of water (2)

ANY ONE (2)

2.3.3



Point distribution
Mark for correct shape of cross section (1)
Mark for indicating new floodplain on cross section (1) Mark for indicating ANY ONE Terrace on cross section (1) (3 x 1) (3)

2.3.4 A rejuvenated river cuts into the valley floor (2)
Cut-off creates a new floodplain (2)
A tree-like shape between the old and new floodplains (2)
[ANY TWO] (2 x 2) (4)

2.3.5 Steepness of slopes will hinder construction of roads/railways (2) Softness of the underlying rocks causes instability of roads/railway construction (2)
Terraces make it expensive to build bridges (2)
Wide floodplains make it difficult to build bridges (2)
[ANY TWO] (2 x 2) (4)

INSTRUCTIONS FOR PARTIAL MARKING - MAXIMUM OF TWO
Steepness of slopes (1)
Softness of the underlying rocks (1)
Terraces (1)
Wide floodplain (1)

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2.4 2.4.1 Side view of a river from source to mouth. (2) (1 x 2) (2)

2.4.2 Smooth/graded (1)
Concave shape (1)
Steeper in the high-lying area (1)
Gentle in the low-lying area (1)
(Accept) It has only permanent base level (1)
(Accept) No temporary base levels/waterfall (1) **[ANY TWO]** (2 x 1) (2)

2.4.3 Graded (1) (1 x 1) (1)

2.4.4 Temporary base planes not clear (2) It has a smooth concave profile (2)
[ANY ONE] (1 x 2) (2)

2.4.5 Temporary base level: waterfall (1)
Permanent base level: sea (1) (2 x 1) (2)

2.4.6 **Processes that create the steep slope in the upper course** Backward erosion of kinks will increase the steepness of the slope (2)

Downward erosion creates a steep slope (2)
In the upper course, water flow is mostly turbulent (2) The current has enough energy to carry larger particles (2) Larger particles increase downward erosion (2)

Processes that create the gradual gradient in the lower course
Lateral erosion will result in a more gradual gradient (2) Sediments are deposited in the lower course (2)
In the lower course, water flow is laminar (2)
The carrying capacity is reduced due to the wider river channels (2) This increases the friction on a river bed and sides and slows down water flow leading to greater deposition rates (2)
[ANY THREE. MUST REFER TO BOTH QUIET GRADIENT AND GRADUAL GRADIENT]
[ANY THREE] (3 x 2) (6)

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2.5 2.5.1 The management of water resources (2) (1 x 2) (2)

2.5.2 A water quality service provider from Kroondal Chrome Mine. (2) (1 x 1) (1)

2.5.3 Monitor the water quality (2) (accept examples)
Identify the origin of the water pollution (2) Check the level of water pollution (2)
Ensure that the ecosystem remains healthy (2)
Ensure that the ecosystem remains in balance (2)
Preserve biodiversity (2)
To conduct ongoing research and predictions (2) To ensure that water is safe for people to use (2) To assist in proper water management (2)
To prevent people from getting (waterborne) diseases (2) (accept examples)
[ANY ONE] (1 x 2) (2)

2.5.4 Pollution due to infiltration of groundwater (2) Reduces the demand for water quality. (2)
Due to mining activities, water pollution has become a serious risk to aquatic life (2)
The shared sources of water pollution are drainage from mines, industrial effluents and domestic sewage (2)
The natural weathering of rocks – which provides a significant amount of toxic elements and compounds to surface and groundwater (2)
Dust from open-pit mining has a negative impact on the water quality of Hex River (2) (1 x 2) (2)

2.5.5 Reduce the use of pesticides/herbicides (2) Buffer the Hex River catchment area (2)
Practice green agriculture (accept examples) (2)
Close the mines along the banks (2)
Manage industrial waste dumping (accept examples) (2)
Reduce deforestation (2)
Reduce pollution of (ground)water (2) Implement legislation (accept examples) (2) Provide incentives (accept examples) (2) Create awareness (accept examples) (2) Implement wastewater treatment (2)
Ensure stormwater management (2)
Ensure wetland conservation (2)
Proper land use planning (accept examples) (2) Regular testing (accept examples) (2)
Improve infrastructure in informal settlements (accept examples) (2)
Maintain water purification plants (2)
Regular environmental impact assessments (2)
Afforestation / Restore the floodplain/riparian zone (2) [ANY FOUR] (4 x 2) (8)

[60]

TOTAL SECTION A: 120

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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 **MAP SKILLS AND CALCULATIONS**

3.1 3.1.1 C (1) (1)
3.1.2 A (1) (1)

3.1.3 3.1.3 (a) 33º 55'**06''(** 1) S **Candidates must include ''(seconds)**
3.1.3 (b) 25º**35'** 46''(1) O **Candidates must include ''(minutes)** (2 x 1) (2)

3.1.4 Calculate the magnetic declination for 2024 by following the given steps.

a) Difference in years: 2024-2021	= 3 years (1)	(1)
b) Average annual change:	12' W (1)	(1)
c) Total change: 3 yr x 12'W	= 36'W (1)	(1)
d) Magnetic declination for 2024:	29º 00' W	
	+ (1) 36'W	(1)
	29º 36' West of True North (1)	(1)

3.1.5 To determine the position of true north(1) (1)
[10]

3.2 3.2.1 Undertrack (1) / old stage (1) (1 x 1) (1)

3.2.2 There is evidence of meandering (2)
The mouth of a river shows that it is in its lower course (2)
Evidence of floodplains around the river (2)
The slope is gently gradual (2)
ANY ONE (1 x 2) (2)

3.2.3**A**- Slipping down the slope (1)
B- undercut slope (1) (2 x 1) (2)

3.2.4 Deposition (1) (1 x 1) (1)

3.2.5 This is the undercut slope associated with fast-flowing water (2)

A lot of energy leading to the process of lateral erosion (2)
It occurs on the outer bank of the meander (2) The slope is steep and concave (2)
[ANY THREE] (3 x 2) (6)
[12]

3.3 GEOGRAPHIC INFORMATION SYSTEMS (GIS)

3.3.1 Demarcation of an area around the spatial feature. (1 x 2) (2)

3.3.2 Provide evidence that buffering occurs in block D2.
Bushveld (1)
Golf course (1)
Fire track (1)
Bankens River Valley (1)
Row of trees (1)
Open space (1) (1 x 1) (1)
[ANY ONE]

3.3.3 Reduce air/noise and water pollution (2) Reduce flooding (2)
Limit development along streams (2)
Protect river from soil erosion (2)
Control fire from spreading (2)
Reduce expansion of residential development (2) [ANY ONE] (1 x 2) (2)

3.3.4 Data integration is a process of combining different types of data on a single map.
to combine (2) (1 x 2) (2)

3.3.5 Satellite (1)
Aerial photos (1)
Digital maps (1)
Digital data (1)
Table information (1)
[ANY ONE] (1 x 1) (1)
[8]

TOTAL SECTION B: 30
GRAND TOTAL: 150

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