Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

JUNE 2024

GEOGRAPHY MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 14 pages.

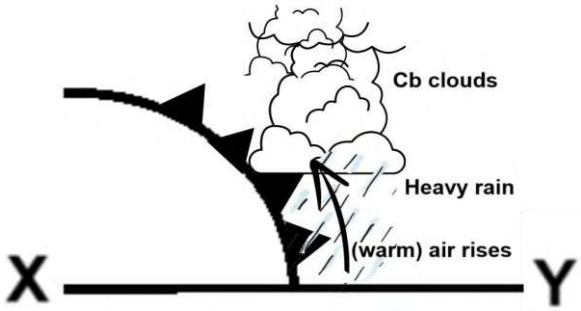
SECTION A

QUESTION 1: CLIMATE AND WEATHER

1.1	1.1.1	C (1)		
	1.1.2	D (1)		
	1.1.3	B (1)		
	1.1.4	D (1)		
	1.1.5	B (1)	(5 x 1)	(5)
1.2	1.2.1	Terrestrial (1)		
	1.2.2	Katabatic (1)		
	1.2.3	Increases (1)		
	1.2.4	Winter (1)		
	1.2.5	Frost (1)	(5 x 1)	(5)
1.3	1.3.1	Mature (1)	(1 x 1)	(1)
	1.3.2	Located in the warm sector (1) Ahead of the cold front (1) **[ANY ONE]**	(1 x 1)	(1)
	1.3.3	Change from a north-westerly wind to a westerly / south-westerly wind (1) The wind strength decreases (1) The wind direction will change in an anticlockwise direction (1) **[ANY ONE]**	(1 x 1)	(1)
	1.3.4	Clockwise circulation of air into a low-pressure cell (in the southern hemisphere) (2) Air moves along the pressure and deflected (to the left) by the Coriolis force (2) **[ANY ONE]**	(1 x 2)	(2)

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1.3.5



Marks are allocated for: correct positioning and shape depicting:
- Air movement (uplifting of air) (1)
- Cumulonimbus (Cb) clouds (1)
- Heavy rain / torrential downpours (1) (3 x 1) (3)

1.3.6 The cold front which is moving faster undercuts / overtakes the warm front. (2)
The warm air is forced to rise resulting in a narrowing of the warm sector. (2)
The coldest air is found behind the cold front causing the warm air to be uplifted along the cold front (2)
The cool air (in front of the warm front) is completely uplifted. (2)
The system dissipates once the warm air has been displaced and there is only cold air on the surface (2)
[ANY THREE] (3 x 2) (6)

1.4 1.4.1 A layer in the atmosphere in which air temperature increases with altitude. (2)
[CONCEPT] (1 x 2) (2)

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

1.4.3 Stronger descending air (2)
Strong subsidence (2)
More pronounced / developed anticyclone (2)
Stronger anticyclonic subsiding air (2)
Well-developed Kalahari high pressure cell (2)
Weaker convection currents over interior of SA (2)
Colder temperature means less rising air (2)
[ANY ONE] (1 x 2) (2)

1.4.4 Dry conditions (1)
Low humidity (1)
Frost (1)
[ANY TWO] (2 x 1) (2)

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1.4.5 **Explain how** sub-tropical anti-cyclones influence climate over South Africa's interior during summer.

During summer, the Kalahari high pressure cell is not very well developed as it shrinks and weakens. (2)
The weakened Kalahari high pressure cells allow the inversion layer to lie above the level of the plateau / escarpment. (2)
Warm moist air (from the south Indian anticyclone) is able to reach the interior of the country because of the weakened Kalahari high pressure cell. (2)
The south Indian high-pressure cell, situated over the Indian Ocean, supplies warm, moist air (rain) because of the anticyclonic circulation. (2)
Divergence of air (NE winds) from south Indian anticyclone onto the interior brings rain. (2)
Unstable conditions cause air (from the south Indian anticyclone) to rise, condensation to occur and clouds / rain to form.
Because of the weakened Kalahari high pressure cell, less air subsides (less compressed air which heats up).
Cold and dry air diverges (SW) from the South Atlantic high pressure, bringing cold dry winds towards land. (2)
Ridging of the South Atlantic high pressure diverts moist air from the Indian Ocean onto the land. (2)
A strong south-easterly from the South Atlantic high ridge brings a strong onshore wind). (2)
[ANY FOUR – MUST INCLUDE INFLUENCE OF AT LEAST TWO OF THE THREE SUBTROPICAL ANTICYCLONES]
[STATEMENT MUST BE QUALIFIED] (4 x 2) (8)

[40]

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QUESTION 2: GEOMORPHOLOGY

2.1	2.1.1	A (1)		
	2.1.2	B (1)		
	2.1.3	C (1)		
	2.1.4	C (1)		
	2.1.5	B (1)	(5 x 1)	(5)
2.2	2.2.1	X (1)		
	2.2.2	Z (1)		
	2.2.3	Z (1)		
	2.2.4	X (1)		
	2.2.5	X (1)	(5 x 1)	(5)
2.3	2.3.1	The total area drained by a river and its tributaries. (2) **[CONCEPT]**	(1 x 2)	(2)
	2.3.2	A (1)	(1 x 1)	(1)
	2.3.3	More streams increase the stream order. (2) The more streams there are; the higher the stream order. (2) Less streams decrease the stream order. (2) The fewer number of streams; the lower the stream order. (2) **[ANY ONE]**	(1 x 2)	(2)
	2.3.4	The total length of streams will increase which will increase the drainage density (2) The stream order will increase which will increase the drainage density (2) Increased run-off will result in a higher drainage density (2) More fingertip streams will result in a higher drainage density. (2) **[ANY ONE]**	(1 x 2)	(2)

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2.3.5 **Explain why** B has a lower drainage density basin compared to A.

In **B** there is more vegetation which intercepts water, reducing runoff / increase infiltration. (2)
In **B** the increased vegetation means that the roots create spaces which promotes infiltration. (2)
In **B** afforestation has the effect of increasing rates of interception which increases infiltration.
The settlement (in **B**) extracts water for domestic use which reduces the amount of run-off and reduces the drainage density.
Extracted water for the cultivated lands (in **B**) reduces the drainage density as run off decreases. (2)
The fewer streams in **B** compared to **A** (with the same size drainage basin) means that the drainage density is lower. (2)
In **B** hotter temperatures increase the evaporation rates and reduce the runoff. (2)
Long periods of rainfall (**B**) saturate the soil; impedes infiltration and leads to higher rates of surface runoff. (2)
Softer / less intensive rainfall (at **B**) promotes the infiltration of water into the ground, reducing runoff. (2)
Unsaturated soil (in **B)** promotes infiltration and decreases run-off. (2)
Permeable soil (higher permeability) (in **B**) allows water to easily move through it easily which allows infiltration and less run off. (2)
Porous rock (in **B**) (i.e., sandstone) have spaces which allow infiltration of water. (2)
[ANY FOUR – STATEMENT MUST BE QUALIFIED] (4 x 2) (8)

2.4 2.4.1 Upstream (1) (1 x 1) (1)

2.4.2 Untreated / inadequately treated sewage (1)
Industrial waste (1)
Polluted runoff (from informal settlements) (1)
[ANY TWO] (2 x 1) (2)

2.4.3 To identify the type / source of pollution (2)
Identify issues so that water quality can be tested / monitored (2)
To assess the level of water pollution (2)
To know the extent of the problem (2)
To know what strategies to implement (2)
For ongoing research (2)
Test / monitor the water quality (2) (accept examples)
Identify the origin of the water pollution (2)
To know what intervention strategies to implement (2)
To do ongoing research and predictions (2)
To assist with proper water management (2)
[ANY ONE] (1 x 2) (2)

2.4.4 Pollution (micro-organisms) degrade water quality, rendering it toxic for animals (2)
Nutrient pollution results in toxic algae that can be harmful to wildlife (2)
The breakdown of raw sewage in water uses a lot of water which reduces the amount of oxygen available to plants and animals (2)
The equilibrium of the river changes and reduces the river habitats
Increased nitrate encourages growth of algae (2)
Deposits of harmful substances (accept examples) increases the growth of algae in the water (2)
Algal bloom reduces oxygen levels in the water (2)
Increased nutrients and organic matter cause eutrophication (2)
Eutrophication causes the growth of microorganisms which decreases oxygen concentration causing the death of fish (2)
Eutrophication suffocates plants and animals (2)
Toxic contaminants can reduce an organism's life span and ability to reproduce (2)
Decreased oxygen makes it difficult for fish and other aquatic life to survive / oxygen starvation (2)
Algae accumulation on the water's surface prevents sunlight from entering, hindering photosynthesis (2)
Toxins accumulate / work their way up in the food chain (2)
Chemicals are toxic to aquatic life, disrupting aquatic habitats / depleting aquatic ecosystems (2)
Altered ecosystems can cause destruction to biodiversity (reduced biodiversity) which can lead to extinction of species (2)
Increased nutrients, algae and sewage fungus creates an imbalance in the ecosystem (2)
Sewage discharge alters plant, animal and microbe communities and increases the abundance of harmful species (2)
[ANY TWO – STATEMENT MUST BE QUALIFIED] (2 x 2) (4)

2.4.5 Consulting and creating public participation / education around using water in a sustainable manner (2)
Educating people about the importance of river management (2)
Create awareness (accept examples) (2)
River health programmes (2)
Legislation prohibiting pollution around Mthatha River (2)
Issue fines for illegal dumping/polluting of the river (2)
Regular monitoring and testing of the water quality (2)
Implement effective maintenance and renovation of the sewerage pumps and waste water works (2)
Buffering around the Mthatha River preventing settlement development (2)
Introducing efficient waste removal around the Mthatha River (2)
Buffering of the Mthatha River catchment area (2)

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Practice green agriculture (accept examples) (2)
Reduce deforestation (2)
Reduce pollution of (ground) water (2)
Implement legislation (accept examples) (2)
Provide incentives (accept examples) (2)
Expand / improve wastewater treatment (2)
Ensure stormwater management (2)
Ensure conservation of wetlands (2)
Proper land use planning (accept examples) (2)
Regular testing (accept examples) (2)
Improve infrastructure in informal settlements (accept examples) (2)
Maintain water purifying plants (2)
Regular environmental impact assessment studies (2)
Afforestation / Recover the flood plain / riparian zone (2)
Implement legislation to discourage pollution of the river (2)
Awareness campaigns to prevent dumping and pollution of river (accept examples) (2)
Promote recycling of wastewater before releasing back into the river (2)

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

[40]

QUESTION 3: RURAL AND URBAN SETTTLEMENTS

3.1	3.1.1	A (1)		
	3.1.2	C (1)		
	3.1.3	B (1)		
	3.1.4	D (1)		
	3.1.5	B (1)	(5 x 1)	(5)
3.2	3.2.1	A (1)		
	3.2.2	B (1)		
	3.2.3	B (1)		
	3.2.4	B (1)		
	3.2.5	A (1)	(5 x 1)	(5)
3.3	3.3.1	Poor municipalities (1) Mismanagement of funds (1) **[ANY ONE]**	(1 x 1)	(1)
	3.3.2	As people migrate from the rural areas to the urban areas, the number of people in rural areas gets less. (2)	(1 x 2)	(2)
	3.3.3	Young adults (economically active) move (2) Less money circulates through area (2) Decrease in the available labour pool (2) Skilled people leave / Brain drain (2) There are more old people left behind (2) Reduces food production (2) Reduces income from exports (2) Basic services close (accept examples) (2) There is a reduction in the value of property (2) Fewer economic activities (accept examples) (2) Remaining business / services increase prices (2) Decrease in employment opportunities (2) Reduced buying power (lower salaries) / less customers (2) Resources are under-utilised (accept examples) (2) Lack of investments (2) Farms will be abandoned (2) **[ANY TWO]**	(2 x 2)	(4)

3.3.4 Employment is created through various infrastructure which is established (and maintained) (2)
EXPLAIN HOW developing infrastructure could reduce impacts of rural depopulation
Better roads will facilitate economic activity (accept examples) (2)
Improved roads will facilitate rapid transport of goods (accept examples) (2)
Investors will be attracted which will increase employment (2)
Bridges will promote easier movement of people and goods (2)
Water infrastructure will ensure supply of water to support economic activities (accept examples) (2)
Home-based business will be more accessible with the support of infrastructure (2)
Communication networks / telecoms assists business to trade (2)
Fibre cables (internet infrastructure) help students / businesses to participate more holistically (2)
Power supply lines facilitates businesses / houses to have electricity (2)
Renewable energy infrastructure (accept examples) will contribute to supply of basic needs / create employment (2)
Railway lines will enable the transportation of goods / people promoting easier access (2)
Dams will ensure a supply of water to various economic sectors (2)
Improved quality of life limit migrants leaving in search of better life (2)
More accessibility by roads / railway improving trade and movement. (2)
[ANY FOUR – STATEMENT MUST BE QUALIFIED] (4 x 2) (8)

3.4 3.4.1 An area in an urban settlement with one main function.
[CONCEPT] (1 x 2) (2)

3.4.2 High level of accessibility (1)
Many transports routes / variety of transportation (1)
High land values / (functional) prestige (1)
(Functional) Convenience / convenient location (1)
(Functional) Magnetism / functional grouping (1)
Large variety / concentration of specialised goods and services (1)
[ANY TWO] (2 x 1) (2)

3.4.3 Crime (high levels of street crime) (1)
Safety issues (1)
[ANY ONE] (1 x 1) (1)

3.4.4 Less congested / less traffic (2)
Pull factors
Shorter commute / closer to suburbs (2)
Located on major traffic routes (2)
Less crime (2)
Effective security / surveillance (2)
Lower rentals
Lower land values (2)
Closer to residential areas (2)
More parking available (2)
Attractive surroundings / aesthetical appeal (accept examples) (2)
Availability of premises / more value for money (2)
Less pollution (2)
The close proximity (to customers/markets/employees) (2)
More modern buildings / business parks (2)
[ANY TWO] (2 x 2) (4)

3.4.5 Businesses will be drawn back / attracted to CBD (2)
Increase investment (public / private) (2)
Land / property prices will increase (2)
Creates a competitive property market because of high demand (2)
Increased foot traffic and more customers drawn to area (2)
Higher demand will increase construction / development which will boost employment (2)
Improvement in (domestic / foreign) investor confidence (2)
Promotes collaborations and partnerships (public/private) (2)
By attracting visitors, investors, residents and workers (accept examples) there will be an economic boost (2)
Increase in municipal rates and taxes (2)
Improved basic services and infrastructure (accept examples) (2)
Partnerships with community to reduce crime and increase youth empowerment (2)
Multiplier effect stimulates other businesses (2)
Reduced urban decay / dilapidation as space becomes occupied (2)
Aesthetical appeal which encourages tourist to land-use zone (2)
CBD gains revenue / income as consumers are encourage to enter CBD (2)
[ANY THREE] (3 x 2) (6)

[40]

SECTION B

QUESTION 4: GEOGRAPHICAL SKILLS AND TECHNIQUES

4.1 MAP SKILLS AND CALCULATIONS

4.1.1 D (1) (1 x 1) (1)

4.1.2 C (1) (1 x 1) (1)

4.1.3 (a) Valley (1) (1 x 1) (1)

(b) There are no obstructions between the two features (1)
Nothing is blocking the view between the two points (1)
5 is at a higher altitude than **6** with a clear view (1)
The two places can be seen from each other. (1)
[ANY ONE] (1 x 1) (1)

4.1.4 (a) Distance = **map distance x map scale**

4,9 cm (1) x 100 (Range 4,8 to 5)
490 m (1) (Range 480 m to 500 m) (2 x 1) (2)

(b) Gradient = $\frac{\textbf{Vertical interval (VI)}}{\textbf{Horizontal equivalent (HE)}}$

VI:
993 m – 988 m = 5 m (1)

HE: 490 m

$\frac{5\text{ (m)}}{490\text{ (m)}}$ (1) (For correct substitution)
(Range: 480 m to 500 m)

1 : 98 (1) (Range: 1 : 96 to 1 : 50) (3 x 1) (3)

(c) The gentle gradient encouraged urban development (accept example of urban development indicated on map) (1)
There is a recreational ground (1)
Large buildings have been developed (1)
It is easier to build on gentle gradient; map shows buildings (1)

[ANY ONE] (1 x 1) (1)

4.2 MAP INTERPRETATION

4.2.1 (a) Vertical (1) (1 x 1) (1)

(b) Excavation (1) (1 x 1) (1)

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(c) Environmental despoliation / scarring the environment (1)
Dust pollutes the air (1)
Biodiversity is reduced (1)
Types of flora / plants specific to the area are destroyed (1)
The habitats of the fauna / animals are destroyed (1)
The removal of vegetation causes an increase of soil erosion (1)
Food chain / food webs are disrupted / destroyed (1)
Hazardous material contaminates the air, soil and water (1)
Large open pits / quarries affect natural topography and drainage (1)
Harmful substances can leach into the soil (1)
Dust, fumes and gases (accept examples) can increase greenhouse gas emissions (1)
Generation of loud sounds that disturb wildlife (1)
Surface and ground water quality and quantity affected (1)
Pollution of the natural environment (1)
Environment treated in manner that threatens the natural environment (1)
[ANY TWO] (2 x 1) (2)

4.2.2 Streets intersect at right angles (1)
Streets are parallel to each other (1)
Roads cross each other at 90° angles (1)
[ANY ONE] (1 x 1) (1)

4.2.3 There are too many stop-go / intersections (2)
Many stop streets / traffic lights (2)
Potential for bottlenecks because of congestion at intersections (2)
[ANY ONE] (1 x 2) (2)

4.2.4 N (1) (1 x 1) (1)

4.2.5 Houses are located in a line along the road (1)
Houses are clustered / close together (1)
[ANY ONE. CANDIDATE MUST REFER TO BOTH THE NUCLEATED AND LINEAR PATTERN] (2 x 1) (2)

4.2.6 More privacy (1)
More autonomous (can make own decisions) (1)
Farmers are more independent (1)
Larger profits are made (1)
[ANY TWO] (2 x 1) (2)

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4.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.3.1 D (1)

4.3.2 Information that describes or gives the characteristics of an object. (2)
Describes characteristics of a feature found at a specific place. (2)
[CONCEPT] (1 x 2) (2)

4.3.3 Gradient / flat land (2)
Availability of space / land (2)
Land / ground stability (2)
[ANY ONE] (1 x 2) (2)

4.3.4 Drainage / water resources / hydrology (1)
Relief / topography (1)
Geology / soil (1)
Transport (1)
Climate variability (1)
Land cover (1)
[ANY ONE] (1 x 1) (1)

4.3.5 Water supply for irrigation / domestic purposes (accept examples) (2)
Suitable gradient for cultivation / ploughing (accept examples) (2)
Transport links for agricultural inputs and products (accept examples) (2)
Suitability of ground for agricultural practices (accept examples) (2)
Climate will dictate the type of farming / how to maximise yields (2)
The land cover / vegetation will influence the type of farming (2)
[ANY ONE] (1 x 2) (2)

[30]

TOTAL: 150

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