Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2023

GEOGRAPHY P1 MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 9 pages.

SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

1.1	1.1.1	D (1)		
	1.1.2	A (1)		
	1.1.3	C (1)		
	1.1.4	B (1)		
	1.1.5	A (1)		
	1.1.6	C (1)		
	1.1.7	C (1)		
	1.1.8	D (1)	(8 x 1)	(8)
1.2	1.2.1	katabatic (1)		
	1.2.2	B (1)		
	1.2.3	Oranges (1)		
	1.2.4	warm (1)		
	1.2.5	micro (1)		
	1.2.6	pollution dome (1)		
	1.2.7	Artificial substances (1)	(7 x 1)	(7)
1.3	1.3.1	west to east/easterly (1)	(1 x 1)	(1)
	1.3.2	Warm air rises sharply along the steep cold front (2) Intense uplift of air along the cold front (2) **[ANY ONE]**	(1 x 2)	(2)
	1.3.3	There is a gentle gradient at **B** that results in the formation of stratus clouds and hence lighter rain (2) Cumulonimbus clouds causes heavy rainfall and stratus clouds causes soft, penetrating, or light rain (2) **[ANY ONE]**	(1 x 2)	(2)
	1.3.4	The warm front symbol at the apex (1)	(1 x 1)	(1)

1.3.5 The coldest air is found ahead of the warm front (2)
Cold air is undercut along the warm front (2) (2 x 2) (4)

1.3.6 Rain (1)
Temperature (1)
Winds (1)
[ANY ONE] (1 x 1) (1)

1.3.7 Heavy rain would result in flooding of homes (2)
Heavy rain would wash away roads (2)
Heavy rainfall will cause informal settlements to become inaccessible/cut off (2)
Low temperatures would cause residents to fall ill (2)
Gale force winds would destroy/damage informal structures (2)
[ANY TWO] (2 x 2) (4)

1.4 1.4.1 5 (1) (1 x 1) (1)

1.4.2 Madagascar (1) (1 x 1) (1)

1.4.3 Freddy moves in an easterly direction (1)
Freddy moves from west to east (1)
First country in the east to west path of Freddy (1)
[ANY ONE] (1 x 1) (1)

1.4.4 It reached warmer water after landfall (2)
Higher temperatures and evaporation energised the system (2)
No more friction over warmer waters (2)
Increase in latent heat (2)
[ANY TWO] (2 x 2) (4)

1.4.5 Eye (1) (1 x 1) (1)

1.4.6 Clear skies (1)
Higher temperatures (1)
No/very little wind (1)
No precipitation (1)
[ANY ONE] (1 x 1) (1)

1.4.7 Descending air causes clear skies (2)
Heating up of descending air causes higher temperatures (2)
Weak pressure gradient leads to no/very little wind (2)
Loss of moisture due to descending air causes no rainfall (2)
[ANY ONE LINKED TO THE WEATHER CONDITION IN QUESTION 1.4.6] (1 x 2) (2)

1.4.8 Sand dunes will be blown away (2)
Erosion of the coastline will increase (2)
Fauna and flora will be destroyed (2)
Habitats and food chains will be disturbed (2)
The salinity of the marine ecosystem will be lowered (2)
The destruction of the infrastructure will pollute the water (2)
[ANY TWO] (2 x 2) (4)

1.5 1.5.1 Anticyclones (Accept ONE example from the sketch) (1)
Ocean currents (Accept ONE example from the sketch) (1)
Plateau (Accept escarpment) (1)
[ANY TWO] (2 x 1) (2)

1.5.2 Anticyclonic movement will feed the country with cooler air (1)
It would allow mid-latitude cyclones to pass over Cape Town (1)
There would be heavy rain, low temperatures, strong winds and low humidity in Cape Town (1)
[ANY TWO] (2 x 1) (2)

1.5.3 It is part of the subtropical anticyclonic system that changes position with the revolution of the earth (1)
Weaker convection currents on the surface to force the descending from the Kalahari high upward (1)
[ANY ONE] (1 x 1) (1)

1.5.4 Stronger descending air heats up adiabatically down the escarpment, causing higher temperatures higher up in the atmosphere (2) (1 x 2) (2)

1.5.5 There is strong subsidence of air down the plateau (2)
The air heats up adiabatically (2)
An inversion layer forms below the plateau (2)
Moist air from warm Mozambique current ridges from the South Indian high up the plateau (2)
The moist air cannot reach the interior of the country because of the position of the inversion layer (2)
There is little cloud formation and hence little rainfall in winter (2)
[ANY FOUR] (4 x 2) (8)

[60]

QUESTION 2: GEOMORPHOLOGY

2.1	2.1.1	Z (1)		
	2.1.2	Y (1)		
	2.1.3	Z (1)		
	2.1.4	Y (1)		
	2.1.5	Z (1)		
	2.1.6	Z (1)		
	2.1.7	Z (1)		
	2.1.8	Y (1)	(8 x 1)	(8)
2.2	2.2.1	lower (1)		
	2.2.2	B (1)		
	2.2.3	A (1)		
	2.2.4	A (1)		
	2.2.5	slip-off (1)		
	2.2.6	ox-bow lake (1)		
	2.2.7	A (1)	(7 x 1)	(7)
2.3	2.3.1	Upper (1)	(1 x 1)	(1)
	2.3.2	Turbulent (1)	(1 x 1)	(1)
	2.3.3	Steeper gradient in the upper course causes water to flow in tumbling and circular motions (1)	(1 x 1)	(1)
	2.3.4	Resistant rock lies either vertical, horizontal or tilted up stream (2) Softer rock underneath the harder rocks (2) Layers of more resistant strata (hard rock) takes longer to erode than layers of less resistant strata (soft rock) (2) Undercutting at the base of the harder resistant rock (2) There would be a sudden drop in elevation (waterfalls) (2) **[ANY TWO]**	(2 x 2)	(4)

2.3.5 Erosion (undercutting) occurs at the foot of the waterfall creating a plunge pool (2)
Softer rock underneath is removed forming a notch (2)
The harder overhanging rock will collapse under gravity causing the waterfall to retreat upstream (2)
[ANY TWO] (2 x 2) (4)

2.3.6 They are navigational hazards (2)
Bridges would have to be constructed over these fluvial landforms (2)
These bridges would either have to include a road or railway line (2)
Turbines for the generation of hydroelectricity would have to be constructed at the base of these landforms (2)
Smaller dams could be built near the base of the falling water (2)
[ANY TWO] (2 x 2) (4)

2.4 2.4.1 Process by which one river captures/robs the headwaters of another river (2)
[CONCEPT] (1 x 2) (2)

2.4.2 The river flowing down the steeper side of the watershed erodes faster because it would be more energetic (1) (1 x 1) (1)

2.4.3 A – captor stream (1)
B – misfit stream (1) (2 x 1) (2)

2.4.4 Ecosystems would be destroyed (2)
Biodiversity would decrease (2)
Soil erosion would be prevalent (2)
Aesthetic beauty would be diminished (2)
Size of drainage basin would decrease (2)
Increased deposition on the banks of the river (2)
[ANY TWO] (2 x 2) (4)

2.4.5 Volume of water would increase (2)
Velocity of the river would increase (2)
Increased energy would result in more erosion (2)
River rejuvenation could occur (2)
Size of the drainage basin increases (2)
[ANY THREE] (3 x 2) (6)

2.5	2.5.1	Sewage (1)	(1 x 1)	(1)
	2.5.2	Agricultural (1)	(1 x 1)	(1)
	2.5.3	It provides water for agricultural crops (1)	(1 x 1)	(1)
	2.5.4	This is the area where most settlements are located (1) Most human activity occurs here (1) This is where most raw sewage leaks into the river (1) Untreated sewage will create a health hazard (1) Dams are built in the lower course and untreated sewage runs into the dams (1) **[ANY TWO]**	(2 x 1)	(2)
	2.5.5	There would be a decrease in agricultural production (2) Less produce available for exports (2) More produce would have to be imported (2) Loss of jobs (2) Buying power decreases – multiplier effect (2) **[ANY ONE]**	(1 x 2)	(2)
	2.5.6	Upgrade sewerage works to ensure a functional sewerage network (2) Legislation is needed to control what is discharged in rivers (2) Public must be made aware/educated about importance of water conservation (2) Construction and settlements on the catchment area must be avoided (2) Constant testing to monitor the state of the river (2) Buffering of rivers (2) Fines to be instituted for those breaking the law (2) **[ANY FOUR]**	(4 x 2)	(8) **[60]**

TOTAL SECTION A: 120

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 3.1.1 C (1°38') (1) (1 x 1) (1)

3.1.2 (a) 3224 DB (1) (1 x 1) (1)

(b) 32°15'S (1); 24°30'E (1)

OR

32°15'-30'S (1); 24°30-45'E (1) (2 x 1) (2)

3.1.3 4 (1) cm x 500 = 2 000 m (1)
[Range 3,9 – 4,1 cm x 500 = 1 950 – 2050] (2 x 1) (2)

3.1.4 (a) B (1) (1 x 1) (1)

(b) $\frac{\frac{1}{2\,000}}{\frac{1}{10\,000}}$ (1) Substitution

$\frac{1}{2\,000} \times \frac{10\,000}{1}$ (1) conversion

5 times (1) (3 x 1) (3)

3.2 **MAP INTERPRETATION**

3.2.1 C (1) (1 x 1) (1)

3.2.2 B (1) (1 x 1) (1)

3.2.3 (a) Y (1) (1 x 1) (1)

(b) It is the north-facing slope (2)
Receive direct sunrays (2)
Slope X is in the shadow zone (2)
[ANY ONE] (1 x 2) (2)

(c) Slopes cool off and causes air in contact with it to cool off and the colder air drains down the slopes (2)
Cool air from the slopes descend under the force of gravity (2)
[ANY ONE] (1 x 2) (2)

3.2.4 (a) Undercut slope (1)
Outer bank (1)
[ANY ONE] (1 x 1) (1)

(b) The faster flowing water at the outer bank, erosion takes place (2) (1 x 2) (2)

3.2.5 (a) Radial (1) (1 x 1) (1)

(b) Streams/rivers flow in all directions from Spandau kop, which is a central point from which rivers radiate (1) (1 x 1) (1)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.3.1 Demarcated area of land designated for environmental protection (2)
[CONCEPT] (1 x 2) (2)

3.3.2 Polygon (1) (1 x 1) (1)

3.3.3 It will protect the water quality (2)
Prevent dumping/pollution of the river (2)
Preserve the bio-diversity/ecosystem/habitat of the river (2)
It will reduce erosion (2)
[ANY ONE] (1 x 2) (2)

3.3.4 (a) Hardware (1)
Software (1)
People (1)
[ANY ONE] (1 x 1) (1)

(b) Can gather information without being physically present (2)
Information is immediately available for emergency services (2)
[ANY ONE] (1 x 2) (2)
[30]

TOTAL SECTION B: 30
GRAND TOTAL: 150