Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2021

GEOGRAPHY P1
MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 10 pages.

SECTION A: CLIMATOLOGY AND GEOMORPHOLOGY

QUESTION 1

1.1	1.1.1	D (1)		
	1.1.2	G (1)		
	1.1.3	C (1)		
	1.1.4	F (1)		
	1.1.5	H (1)		
	1.1.6	B (1)		
	1.1.7	E (1)	(7 x 1)	(7)
1.2	1.2.1	B (1)		
	1.2.2	B (1)		
	1.2.3	A (1)		
	1.2.4	C (1)		
	1.2.5	B (1)		
	1.2.6	C (1)		
	1.2.7	A (1)		
	1.2.8	C (1)	(8 x 1)	(8)
1.3	1.3.1	4 hPa/mb (1)	(1 x 1)	(1)
	1.3.2	They are further north/migrating northwards (2) They are closer to the land (2) **[Any ONE]**	(1 x 2)	(2)
	1.3.3	On-shore winds from the South Indian high have a shorter fetch (distance to travel) hence they pick up less moisture over the ocean reducing the amount of rainfall in winter (2) Interior dominated by high pressure/winter descending air (2) Warm sector of the mid-latitude cyclone (2) Cool air diverging toward the country with low moisture levels (2) Inversion below the escarpment restricting moist air to reach the interior (2) **[Any ONE]**	(1 x 2)	(2)

1.3.4 (a) Eastwards (1)
West to east (1)
[Any ONE] (1 x 1) (1)

(b) Warm front occlusion (1) (1 x 1) (1)

(c) The coldest air is found in front of the cold front (2)
Cool air behind the cold front glides over the cold air in front of it (2) (2 x 2) (4)

(d) ***Wind direction***
Clockwise spiralling of air (2)
Backing of the wind will occur (2)
[Any ONE] (1 x 2) (2)

Precipitation
Light to moderate rainfall due to Cirrus and Cirrostratus clouds (2)

Heavy continuous rainfall due to Nimbostratus clouds (2)
[Any ONE] (1 x 2) (2)

1.4 1.4.1 Directional arrow (1)
High pressure (1020 hPa) in the interior (1)
Coastal low at the coast (1)
[Any ONE] (1 x 1) (1)

1.4.2 The Kalahari (continental) high is only dominant in winter (2) (1 x 2) (2)

1.4.3 Air diverges from the Kalahari high pressure to the coastal low (2)
Coastal low caused offshore movement of air (2) (2 x 2) (4)

1.4.4 High temperatures can reduce the soil moisture content (2)
High temperatures cause evaporation of water bodies (rivers, lakes, dams etc.) (2)
Fires can destroy or compromise habitats/ecosystems (2)
Fires can reduce biodiversity (2)
Fires destroy natural vegetation increasing levels of soil erosion (2)
Removal of natural vegetation can affect microclimate of the area (2)
Strong, gusty winds increase soil erosion (2)
Windy conditions increase silt content in dams and rivers (2)
Aesthetic beauty of the area is diminished (2)
[Any FOUR] (4 x 2) (8)

1.5 1.5.1 High amounts of air pollution due to heat-generating activities (accept examples) (1)
Influx of motor vehicles in the city (1)
Industrial activity in cities emit large amounts of air pollution (1)
Deforestation decrease photosynthesis and increase CO_2 (1)
Construction activities causes dust particles (1)
[Any TWO] (2 x 1) (2)

1.5.2 It is compressed (1)
Well defined/dome shaped over the city (1)
[Any ONE] (1 x 1) (1)

1.5.3 There are no convection streams to disperse the pollutants vertically (2)
Descending air is stronger at night (2)
[Any ONE] (1 x 2) (2)

1.5.4 Greenhouse effect is generated by pollutants that are trapped (2)
Pollutants in the city forms artificial clouds and traps the terrestrial radiation causing a greenhouse effect (2)
[Any ONE] (1 x 2) (2)

1.5.5 It is more dominant in winter due to subsiding colder air that produces inversion conditions (2)
Pollutants trapped over the city affects air quality that is in direct contact with people (2)
Less convection streams that remove pollutants into the upper atmosphere (2)
[Any TWO] (2 x 2) (4)

1.5.6 Reduce carbon emissions by the use of alternate sources of energy (accept examples) (2)
Reduces the number of private vehicles on our roads (accept examples) (2)
Decentralisation of industries from the city to the surrounding countryside (2)
Create more parks/greenbelts in the city/plant more trees to absorb more carbon dioxide (2)
Green policy to be included in all legislation (2)
Awareness/education campaigns on green policies (2)
Households (accept examples) (2)
Roof top gardens (2)
[Any TWO] (2 x 2) (4)
[60]

QUESTION 2

2.1 2.1.1 B (1)

2.1.2 F (1)

2.1.3 E (1)

2.1.4 H (1)

2.1.5 D (1)

2.1.6 G (1)

2.1.7 C (1) (7 x 1) (7)

2.2 2.2.1 A (1)

2.2.2 D (1)

2.2.3 B (1)

2.2.4 C (1)

2.2.5 C (1)

2.2.6 D (1)

2.2.7 B (1)

2.2.8 A (1) (8 x 1) (8)

2.3 2.3.1 Uplift of the land (isostatic uplift) (1)
Sea level drops (1)
Increase in volume of water (river capture) (1)
Higher rainfall (1)
[Any ONE] (1 x 1) (1)

2.3.2 Due to the lowering of the base level the river gains energy and starts to erode vertically (2) (1 x 2) (2)

2.3.3 (a) The meander changes into an entrenched/incised meander (2)
(1 x 2) (2)

(b) It will be expensive to construct a bridge at this point (2)
It will be difficult to construct a bridge due to the instability of the rock structure (2)
[**Any ONE**] (1 x 2) (2)

2.3.4 River will now show a multi-concave profile (2)
River becomes ungraded (2)
[Any ONE] (1 x 2) (2)

2.3.5 It indicates the point where rejuvenation has taken place (2)
The point where the old erosion level meets with the new (2)
[Any ONE] (1 x 2) (2)

2.3.5 The knickpoint can retreat upstream because of headward erosion (2)
Waterfalls can form at the knickpoint due to the break/lowering along the course of the river (2) (2 x 2) (4)

2.4 2.4.1 Lower (1) (1 x 1) (1)

2.4.2 Wider channel (2)
Floodplain is indicated (2)
[Any ONE] (1 x 2) (2)

2.4.3 Deposits of silt accumulate on the floodplain (2)
This silt deposits enrich/replenish the soil and increases its fertility (2)
(2 x 2) (4)

2.4.4 It is effective in flood control as it acts as a buffer that can protect surrounding land (2)
Floodplains ensures soil fertility/conservation as silt is continually deposited (2)
It provides a habitat for ecosystems that can thrive on natural vegetation (2)
It works in tandem with the river to ensure biodiversity (2)
It contributes to the aesthetic beauty of the drainage basin (2)
[Any TWO] (2 x 2) (4)

2.4.5 Heavy rainfall will destroy agricultural crops/livestock (2)
Run-off would wash away fertile soil (2)
Homes destroyed on floodplain (2)
Infrastructure would be damaged (2)
Lead to loss of lives (2)
[Any TWO] (2 x 2) (4)

2.5 2.5.1 19 million (1) (1 x 1) (1)

2.5.2 '... inoperative and dilapidated wastewater treatment plants.' (1)
(1 x 1) (1)

2.5.3 Reduces the amount of oxygen available to plants and animals in a river (1) (1 x 1) (1)

2.5.4 To protect water resources and make water use sustainable (2)
Manage water for irrigation in agricultural production (2)
Increased human activities are causing more water pollution and this must be management and prevented (2)
Building of dams ensure permanent water supply for human activities (2)
Controlling flood damage (2)
Making sure that water recreational activities and sport are being practiced so that water resources are not polluted or exploited (2)
To make water available in a responsible manner for manufacturing (2)
[Any TWO] (2 x 2) (4)

2.5.5 Fines to be imposed on municipalities (2)
Legislation preventing raw sewage from being dumped in rivers (2)
Allocation of sufficient budgets to fix wastewater treatment plants (2)
Provision of suitably qualified technicians to attend to the maintenance of wastewater treatment plants (2)
Encourage recycling of sewage (2)
Frequent testing of water quality to monitor impurities (2)
[Any FOUR] (4 x 2) (8)
[60]

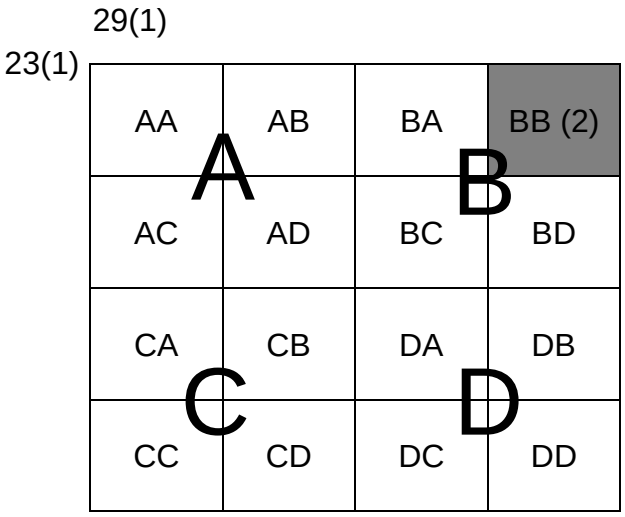
SECTION B: GEOGRAPHICAL SKILLS AND TECHNIQUES

QUESTION 3

MAPWORK SKILLS AND CALCULATIONS

3.1 3.1.1 D (1) (1 x 1) (1)

3.1.2



(4 x 1) (4)

3.2 VI = 1 600 m – 1 235 m
= 365 m (1)

VI = 1 600 m – 1 235 m
= 365 m (1)

HE = 1,6 (1) cm x 500 m

HE = $\frac{16\ (1)\ cm \times 100\ 000}{500}$

Range for measurement [1,59 cm to 1,61 cm]

= 800 m (1) **OR** = 800 m (1)

Range for HE [795 m – 805 m]

G = $\frac{365}{800}$ (1) (One mark for correct substitution)

G = $\frac{365}{800}$ (1)

= 1 : 2,19 / 1 in 2,19 / $\frac{1}{2,19}$ (1)

= 1 : 2,19 / 1 in 2,19 / $\frac{1}{2,19}$

Range for final answer [1 : 2,18 – 1 : 2,21]

(5 x 1) (5)

MAP INTERPRETATION

3.3	3.3.1	D (1)	(1 x 1)	(1)
	3.3.2	A (1)	(1 x 1)	(1)
3.4	3.4.1	Katabatic (1)	(1 x 1)	(1)
	3.4.2	There is more subsiding air during the night which pushes the inversion layer/thermal belt/pollution dome lower (2) A lower inversion layer/thermal belt/pollution dome will result in a high pollution concentration (2) **[Any ONE]**	(1 x 2)	(2)
	3.4.3	The vegetation/trees in the area/green parks (REC)/green belts (increase afforestation) (2) Outskirts of Louis Trichardt – open space (2) **[Any ONE]**	(1 x 2)	(2)
3.5	3.5.1	Southerly (1)	(1 x 1)	(1)
	3.5.2	Dam wall is on the southern section of the dam (2) Contour lines show decrease in height in a southerly direction (2) Spot heights show decrease in height in a southerly direction (2) The bend of the contour lines in the river valley point to increasing height/V-shape points upstream (2) The water accumulates north of the dam wall (2) **[Any TWO]**	(2 x 2)	(4)

GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.6 3.6.1 It is facts or figures, or information that is stored in or used by a computer. (2)
[**CONCEPT]** (1 x 2) (2)

3.6.2 Primary data (1) (1 x 1) (1)

3.6.3 Woodland (1) (1 x 1) (1)

3.6.4 Deforestation has increased silt in the dam and reduced dam volumes (2)
The sluices will be blocked due to silting and will cause damage (2)
Repairing the damage to the sluices will be costly (2)
The blockage will increase dam levels much quicker and can cause flooding (2)
[Any TWO] (2 x 2) (4)
[30]

GRAND TOTAL: 150