



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

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**GEOGRAPHY P1
MEMORANDUM**

MARKS: 225


This memorandum consists of 13 pages.

SECTION A: PHYSICAL GEOGRAPHY: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1

- | | | | | | |
|-----|-------|-----|---|---------|-----|
| 1.1 | 1.1.1 | B | (Subsides with a rotating action) ✓ | | |
| | 1.1.2 | C | (Increasing temperature and rainfall) ✓ | | |
| | 1.1.3 | C | (Movement of the overhead sun from the Tropic of Capricorn to the Tropic of Cancer) ✓ | | |
| | 1.1.4 | A | (An imbalance in energy between the polar and tropical regions) ✓ | | |
| | 1.1.5 | B | (Air ahead of the cold front is slightly warmer than the air behind the cold front) ✓ | | |
| | 1.1.6 | C | (Anticlockwise) ✓ | | |
| | 1.1.7 | B | (Vortex) ✓ | | |
| | 1.1.8 | D | (Typhoons) ✓ | (8 x 1) | (8) |
| 1.2 | 1.2.1 | | Deranged ✓ | | |
| | 1.2.2 | | Centripetal ✓ | | |
| | 1.2.3 | | Parallel ✓ | | |
| | 1.2.4 | | Dendritic ✓ | | |
| | 1.2.5 | | Radial ✓ | | |
| | 1.2.6 | | Trellis ✓ | | |
| | 1.2.7 | | Rectangular ✓ | (7 x 1) | (7) |
| 1.3 | 1.3.1 | | Winter ✓ | | (1) |
| | 1.3.2 | | Isobars increase towards the centre of the high pressure cell. ✓ | | (1) |
| | 1.3.3 | (a) | B ✓ | | (1) |
| | | (b) | They occur in groups or families with one following directly after the other. ✓✓ | | (2) |

- 1.3.4
- The cold fronts occur more frequently during winter when all the pressure belts and wind systems move slightly north as the sun is vertically overhead at 23°N ✓✓
 - ITCZ moved northwards and with it the subtropical high pressure belt, this allows the cold front to influence the weather during Winter ✓✓ (Any 1 x 2) (2)
- 1.3.5
- Temperature – decreases ✓✓
- Wind – the wind is north west ahead of the cold front backing to westerly as cold front passes over and then southerly ✓✓ (2 x 2) (4)
- 1.3.6
- There is repeated coverage of an area therefore continual updates can be monitored ✓✓
 - Images are transmitted quickly ✓✓
 - Images can warn meteorologists about approaching weather conditions and public warnings can then be issued ✓✓
 - Through early warning systems people are able to better prepare for a weather hazard and they can prevent a catastrophe. ✓✓
 - People can be evacuated and emergency measures can be put in place ✓✓ (Any 2 x 2) (4)
- 1.4 1.4.1
- A heat island refers to a situation where the air temperature of a city centre is warmer than the air temperature of surrounding rural areas. ✓✓ **(CONCEPT)** (1 x 1) (1)
- 1.4.2
- Increased human discomfort especially in summer. ✓
 - Increased conditions suitable for the spread of vector-borne diseases, caused by mosquitoes and fleas. ✓
 - Reduced visibility due to smog, particularly in winter. ✓
 - Increased levels of urban ozone and air pollution ✓
 - Increased air conditioner use which degrades local air quality and releases greenhouse gases ✓ (Any 2 x 1) (2)
- 1.4.3
- During the DAY heating results in increased turbulence, thus a relative decrease in stability of the lower atmosphere, therefore the heat island grows vertically. ✓✓
- During the NIGHT less heating results in a decrease in turbulence, thus a relative increase in stability of the lower atmosphere. Therefore the vertical dimension decreases. ✓✓ (2 x 1) (2)
- (THE CONCEPT OF MORE CONVECTION DURING THE DAY AND LESS AT NIGHT MUST BE UNDERSTOOD.)**
- 1.4.4
- Plant more trees and plants ✓✓
 - Have more parks and green belts ✓✓
 - Rooftop gardens where plants and vegetables are grown ✓✓
 - Put catalytic convertors in motor vehicles ✓✓
 - Allow fewer vehicles in the CBD ✓✓
 - Park and Ride schemes or public transport ✓✓

		<ul style="list-style-type: none"> Industries should burn lower sulphur coal or wash the coal before burning ✓✓ Industries should use gas instead of coal ✓✓ Put filters and scrubbers onto factory chimneys to reduce pollution output ✓✓ Institute legislation, laws and fines for excessive release of pollution in the atmosphere ✓✓ Make surfaces lighter e.g. rooftops of buildings ✓✓ Alternative energy like solar, wind, geothermal, etc. to reduce greenhouse gases ✓✓ 	(Any 4 x 2)	(8)
1.5	1.5.1	B – Oxbow lake ✓	(1 x 1)	(1)
	1.5.2	Rainfall ✓✓	(1 x 2)	(2)
	1.5.3	<ul style="list-style-type: none"> Fertile soil ✓✓ Flooding causes natural enrichment of soil ✓✓ Less fertilisers ✓✓ Enough water for irrigation ✓✓ Easy to construct transport routes ✓✓ 	(Any 2 x 2)	(4)
	1.5.4	Makes the river bank higher, therefore restricting overflow ✓✓ Reduces chances of flooding ✓✓	(Any 1 x 2)	(2)
	1.5.5		(3 x 1)	(3)
1.6	1.6.1	Source	(1 x 1)	(1)
	1.6.2	Multi-concave ✓	(1 x 1)	(1)
	1.6.3	A longitudinal profile is the shape of the river from its source to the mouth ✓✓ <u>while</u> a cross profile is the shape of the river channel from bank to bank. ✓✓	(2 x 2)	(4)
	1.6.4	The river has sufficient energy to flow, with erosion rates in balance with deposition rates. ✓✓	(1 x 2)	(2)
	1.6.5	Upper course – There is much friction as there is little volume, the channel is small and the bed is uneven. A steep gradient gives the river energy to overcome this friction and still flow. ✓✓ Lower course – There is less friction as there is more volume, the channel is large and the bed is even, so the river does not need as much energy to flow. ✓✓	(2 x 2)	(4)

- 1.6.6
- A knickpoint is a break in the slope of a river profile caused by a rejuvenated river. A knickpoint is often a waterfall. ✓✓
 - When rejuvenation of a river flowing on a wide valley occurs, a new valley is carved into the old valley. ✓✓
 - The floor of the old valley forms a terrace on either side of the valley after rejuvenation. ✓✓
 - Incised meanders form when rejuvenation occurs in a stream which is already meandering. ✓✓
 - Incised meanders can also form oxbow lakes and cut-off meander scars. ✓✓

(Any 4 x 2)

(8)

[75]**QUESTION 2**

2.1 2.1.1 High ✓

2.1.2 High ✓

2.1.3 High ✓

2.1.4 Low ✓

2.1.5 Low ✓

2.1.6 (a) High ✓

(b) Low ✓

(7 x 1)

(7)

2.2 2.2.1 C Tributary ✓

2.2.2 E River capture ✓

2.2.3 J Antecedent river ✓

2.2.4 G Periodic ✓

2.2.5 H Suspension ✓

2.2.6 D Abstraction ✓

2.2.7 F Superimposed ✓

2.2.8 I Water Table ✓

(8 x 1)

(8)

2.3	2.3.1	11 (K is the 11 th letter of the alphabet) ✓✓	(1 x 1)	(1)
	2.3.2	<ul style="list-style-type: none"> • A sea temperature of 27 °C and above ✓✓ • An intense low pressure cell on the surface ✓✓ • Presence of coriolis force ✓✓ 	(Any 2 x 2)	(4)
	2.3.3	Condensation releases latent heat into the atmosphere which provides the energy. ✓✓	(1 x 2)	(2)
	2.3.4	<p>Winds are slowed down because of friction with the land surface ✓✓</p> <p>Drier air enters the system, which reduces the amount of condensation and therefore the amount of energy ✓✓</p>	(2 x 2)	(4)
	2.3.5	<ul style="list-style-type: none"> • Death of people and animals ✓✓ • People and animals left with no shelter/homeless ✓✓ • Evacuation of people ✓✓ • Looting and civil disturbance ✓✓ • Lives disrupted/thousands have no access to homes or jobs ✓✓ • Lack of clean water and sanitation facilities ✓✓ • Spread of diseases ✓✓ 	(Any 4 x 2)	(8)
2.4	2.4.1	A temperature inversion means an increase in temperature with an increase in altitude. ✓	(CONCEPT) (1 x 1)	(1)
	2.4.2	When cold air sinks under the influence of gravity to the valley bottom and forces warm air to rise ✓✓	(1 x 2)	(2)
	2.4.3	<ul style="list-style-type: none"> • It affects cloud formation ✓✓ • It prevents thunderstorm formation ✓✓ 	(Any 1 x 2)	(2)
	2.4.4	<p>No clouds ✓</p> <p>No wind ✓</p>	(2 x 1)	(2)
	2.4.5	<p>Crops that are frost-resistant are planted at the foot of the slope. (A) ✓✓</p> <p>Crops that are sensitive to frost are planted higher up the slope. (B) ✓✓</p>	(2 x 2)	(4)
2.5	2.5.1	It is the volume of water that flows down a river. ✓✓	(CONCEPT) (1 x 2)	(2)
	2.5.2	<p>A – laminar flow ✓</p> <p>B – turbulent flow ✓</p>	(2 x 1)	(2)
	2.5.3	The river bed is uneven and steep causing the water to move in a bubbling and turbulent manner ✓✓	(1 x 2)	(2)
	2.5.4	<p>Water flows over a level and even river bed hence there is no friction.</p> <p>This results in higher flow speeds ✓✓</p>	(1 x 2)	(2)

- 2.5.5 When the velocity is higher, larger size particles will be carried downstream ✓✓
When the velocity is low there will be a reduction in the transport of sediments and more deposition. ✓✓ (2 x 2) (4)
- 2.6 2.6.1 An area drained by a central river and all its tributaries / an open system of inputs, stores, flows and outputs. ✓ **(CONCEPT)** (1 x 1) (1)
- 2.6.2 A watershed is an area of high ground separating two drainage basins ✓ while an interfluvium is a high area of spurs between two river valleys. ✓ (2 x 1) (2)
- 2.6.3 The prevailing climatic conditions determine the amount of precipitation ✓✓ (1 x 2) (2)
- 2.6.4 It will increase the run off ✓✓ (1 x 2) (2)
- 2.6.5 Concrete and tar surfaces are impermeable therefore water will run off. ✓✓
The removal of vegetation and trees increases run off ✓✓ (2 x 2) (4)
- 2.6.6
- River water is polluted by industrial effluent, agricultural run-off and untreated sewerage ✓✓
 - The nature of run-off can be changed by building dams ✓✓
 - Removal of vegetation can lead to flooding ✓✓
 - Cities and other structures built on the floodplain of the river decreases infiltration and can lead to flooding ✓✓
 - The draining of swamps which occurs during flooding ✓✓
 - The ecology of rivers and their catchment is disturbed by the removal of water for irrigation, industry, mines and domestic use ✓✓
 - Digging of boreholes results in less groundwater flowing into the river ✓✓
 - High amounts of pesticides can harm aquatic life and increase algae in the water ✓✓
 - Human made levees keep water in the channel ✓✓
 - Inter-basin transfer of water affects aquatic life and distribution of drainage basins ✓✓ (Any 4 x 2) (8)

[75]

QUESTION 3

- 3.1 3.1.1 Rural – Urban fringe ✓
- 3.1.2 Gated community ✓
- 3.1.3 Break of bulk point ✓
- 3.1.4 Grid or Rectangular ✓
- 3.1.5 Ghetto ✓
- 3.1.6 Counter-urbanisation ✓
- 3.1.7 Urban sprawl (7 x 1) (7)
- 3.2 3.2.1 C (Tertiary) ✓
- 3.2.2 D (produce goods that need to be manufactured close to the consumer.) ✓
- 3.2.3 C (clothing and textile.) ✓
- 3.2.4 A (spatial development initiatives.) ✓
- 3.2.5 B (maize.) ✓
- 3.2.6 C (are not affected by transport costs.) ✓
- 3.2.7 D (in Mpumalanga) ✓
- 3.2.8 A (the growing strain on water resources.) ✓ (8 x 1) (8)
- 3.3 3.3.1 A – Central Business District (CBD) ✓
B – Zone of Transition/Zone of decay ✓ (2 x 1) (2)
- 3.3.2 Business, ✓ Government, ✓ Legal, ✓ Public services, ✓ Residential, ✓ Cultural, ✓ Economic, ✓ Recreational, ✓ Retail, ✓ Financial, ✓ Entertainment ✓ (Any 2 x 1) (2)
- 3.3.3 Land is scarce, valuable and limited. Therefore, it must be utilised to the maximum by building up. ✓✓ (1 x 2) (2)
- 3.3.4 It is close to the CBD where expansion can occur ✓✓ (1 x 2) (2)
- 3.3.5
- Upgrading the physical environment with modern buildings and landscaped open spaces ✓✓
 - Building of cultural complexes and conference centres ✓✓
 - The encouragement of residential developments and small business ✓✓
 - Promotional campaigns to create a positive image of the CBD ✓✓
 - High quality leisure opportunities ✓✓ (Any 2 x 2) (4)

- 3.3.6
- Slum clearance which involves demolishing buildings and housing people in council houses/flats in another area ✓✓
 - Renovating old buildings and building new offices ✓✓
 - Invasion and succession (replacing the original function with a new function) ✓✓
 - Gentrification/Chelseafication ✓✓
 - Facadism ✓✓ (Any 2 x 2) (4)
- 3.4 3.4.1 Rural – urban migration ✓ (1 x 1) (2)
- 3.4.2
- Mechanisation of farms ✓
 - Natural disasters e.g. floods, droughts ✓
 - Low wages ✓
 - Poverty ✓
 - Lack of services e.g. electricity, water and sewage ✓
 - Lack of facilities e.g. schools, hospitals ✓
 - Soil erosion ✓
 - Poor image of rural area ✓ (Any 2 x 1) (2)
- 3.4.3
- There are no jobs available hence no money ✓✓
 - There is no social life ✓✓
 - Poor skills ✓✓
 - Lack of proper education ✓✓ (Any 2 x 2) (4)
- 3.4.4
- Population of working age is predominantly female ✓✓
 - Rest of the population is old and very young ✓✓
 - Lower demand for shops and services in rural areas ✓✓
 - Schools and shops close down ✓✓
 - Fewer jobs available ✓✓
 - Remaining young people are forced to leave rural areas ✓✓
 - Buildings and farms abandoned giving rise 'ghost' settlements ✓✓
 - Productivity of rural areas decreases ✓✓ (Any 4 x 2) (8)
- 3.5 3.5.1 Tertiary ✓✓ (1 x 1) (1)
- 3.5.2 It is the total value of a country's output during one year. ✓
(CONCEPT) (1 x 1) (1)
- 3.5.3
- A greater proportion of people need to be employed in the tertiary sector ✓✓
 - An increase in exports and a decrease in imports ✓✓
 - Import replacement ✓✓ (Any 2 x 1) (2)
- 3.5.4
- Huge demand for prime land in South Africa ✓✓
 - Shortage of housing leads to many housing developments ✓✓ (Any 1 x 2) (2)
- 3.5.5
- Provides jobs ✓✓
 - Provides raw materials for industry ✓✓
 - Earns valuable income for exports ✓✓ (Any 2 x 2) (4)

3.5.6 TRADE

South Africa has three deep-water ports, three international airports and well-developed cold chain facilities ✓✓

The infrastructure within the harbour and hinterland is good. ✓✓

South Africa enjoys counter-seasonality to Europe ✓✓

Trade agreements with the European Union and United States provides increased market access for South African farmers ✓✓

LAND OWNERSHIP

The size of the farm unit has increased with the government's commitment to land reform ✓✓

More small-scale farmers are able to generate an income from their produce ✓✓

Support from co-operative farming which reduces the capital required by an individual farmer ✓✓ (4 x 2) (8)

(MAXIMUM OF 4 MARKS FOR TRADE AND 4 MARKS FOR LAND OWNERSHIP)

3.6 3.6.1 Part of the economy that is not taxed and is not part of the official government records ✓✓ **(CONCEPT)** (1 x 1) (1)

3.6.2 Crime ✓✓ (1 x 2) (2)

3.6.3

- Unemployment ✓
- Unskilled ✓
- Needs a source of income ✓
- Unable to afford a lifestyle in the city ✓
- A slump in the economy ✓
- Rural-Urban migration ✓

(Any 2 x 2) (4)

3.6.4

- Introduce licensing requirements to regulate the sector ✓✓
- Specific areas near stations, bus terminals and taxi ranks to be allocated for informal trading ✓✓
- Partnerships between private sector and informal vendors
- Local authorities must provide infrastructure ✓✓
- Improve skills through learnership programmes ✓✓ (Any 2 x 2) (4)

[75]

QUESTION 4

- | | | | | |
|-----|-------|---|---------|-----|
| 4.1 | 4.1.1 | D ✓ | | |
| | 4.1.2 | H ✓ | | |
| | 4.1.3 | F ✓ | | |
| | 4.1.4 | E ✓ | | |
| | 4.1.5 | G ✓ | | |
| | 4.1.6 | A ✓ | | |
| | 4.1.7 | B ✓ | | |
| | 4.1.8 | C ✓ | (8 x 1) | (8) |
| 4.2 | 4.2.1 | Industrial inertia ✓ | | |
| | 4.2.2 | GEAR ✓ | | |
| | 4.2.3 | Beneficiation ✓ | | |
| | 4.2.4 | Quaternary activities ✓ | | |
| | 4.2.5 | Multiplier effect ✓ | | |
| | 4.2.6 | Periphery ✓ | | |
| | 4.2.7 | Core ✓ | (7 x 1) | (7) |
| 4.3 | 4.3.1 | The SITE is the actual piece of land on which a settlement is built ✓ while SITUATION of a settlement refers to the position of a settlement in relation to the surrounding environment ✓ | | |
| | | (CONCEPT) | (2 x 1) | (2) |
| | 4.3.2 | A – Dispersed ✓✓
B – Linear ✓✓ | (2 x 2) | (4) |
| | 4.3.3 | Flat land ✓✓
Private land ownership ✓✓ | (2 x 2) | (4) |
| | 4.3.4 | C is located on the north facing slope and is in the southern hemisphere. North facing slopes are warmer because they receive the direct rays of the sun. ✓✓ | (1 x 2) | (2) |
| | 4.3.5 | Drinking water can now be piped to homes. ✓✓ | (1 x 2) | (2) |

- 4.4 4.4.1 It is an illegally built settlement. ✓✓ **(CONCEPT)** (1 x 2) (2)
- 4.4.2 The municipality has failed to build them proper homes. ✓✓ (1 x 1) (1)
- 4.4.3
- Vulnerable in times of heavy rains and floods ✓✓
 - Open fires present a fire hazard ✓✓
 - Spread of diseases ✓✓
 - Crime, drugs and poverty ✓✓ (Any 2 x 2) (4)
- 4.4.4
- Lifestyle issues ✓✓
 - Noise pollution associated with urban activities ✓✓
 - Air pollution associated with industries ✓✓
 - Gated communities – separates rich from poor ✓✓
 - New developments that block particular views ✓✓
 - Relocation (build houses where land is available) ✓✓ (Any 2 x 2)
- Self-help schemes e.g. providing basic services ✓✓
 - Giving squatters legal ownership of the land they live on ✓✓
 - RDP houses ✓✓
 - Consultation with local communities ✓✓ (Any 2 x 2) (8)
- 4.5 4.5.1 It is a specialised industrial area that has been identified for export driven industries. ✓ **(CONCEPT)** (1 x 1) (1)
- 4.5.2 Accessible to all major world markets ✓✓ (1 x 2) (2)
- 4.5.3
- Coega ✓
 - East London IDZ ✓ (Any 1 x 1) (1)
- 4.5.4
- Provide communities with opportunities to participate in economic activities ✓✓
 - Provide sustainable job creation ✓✓
 - Use local resources ✓✓
 - Improve infrastructure ✓✓
 - Incentives for industries to relocate ✓✓
 - Skills development/entrepreneurship ✓✓ (Any 3 x 2) (6)
- 4.5.5
- Develop and establish world class industrial parks ✓✓
 - Provide quality infrastructure, business and utility services ✓✓
 - Create jobs ✓✓
 - Attract foreign and local sustainable investment projects ✓✓
 - Increased exports ✓✓
 - New skills are developed ✓✓
 - Social upliftment ✓✓ (Any 4 x 2) (8)

- 4.6 4.6.1 Durban-Pinetown ✓ (1 x 1) (1)
- 4.6.2 1- Crude oil is imported through Durban harbour. ✓ ✓
Close to all oil producing countries of the Middle East ✓ ✓
(Any 1)
- 2- Sugar cane is the main agricultural crop. ✓ ✓ (2 x 2) (4)
- 4.6.3
- Warm climate and high rainfall ✓ ✓
 - Well served by sea transport ✓ ✓
 - Many agricultural raw materials ✓ ✓
 - Good supply of water ✓ ✓ (Any 2 x 2) (4)
- 4.6.4
- Congestion in the harbour ✓ ✓
 - Lack of flat land for expansion ✓ ✓
 - Not accessible to larger overseas markets ✓ ✓ (Any 2 x 2) (4)
- [75]**

GRAND TOTAL: 225