



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2010

**GEOGRAPHY – FIRST PAPER
MEMORANDUM**

MARKS: 300

TIME: 3 hours

This memorandum consists of 14 pages.

QUESTION 1

- 1.1 1.1.1 katabatic (2)
- 1.1.2 night (2)
- 1.1.3 downslope (2)
- 1.1.4 Sublimation (2)
- 1.1.5 temperature inversion (2) 5x2=(10)
- 1.2 1.2.1 plateau (2)
- 1.2.2 mesa (2)
- 1.2.3 butte (2)
- 1.2.4 cliff (2)
- 1.2.5 badlands/pediplain/pediment (2) 5x2=(10)
- 1.3 1.3.1 Urban heat island – is an urban area of higher temperature surrounded by a rural area of lower temperature [Concept]. (2) 1x2=(2)
- 1.3.2 The temperature at A is higher than B. (2) 1x2=(2)
- 1.3.3 – The urban area has a lot more concrete, steel and tar than the rural area. (2)
– There is less vegetation in the urban area. (2)
– The urban areas activities such as industries make it warmer. (2)
– Multiple reflections in the urban due to the tall buildings make it warmer. (2)
– More dust and pollution found in the urban area. (2)
[Any THREE suitable answers] 3x2=(6)

1.3.4 A, the urban area will be warmer and receive more rainfall.(2)

REASONS

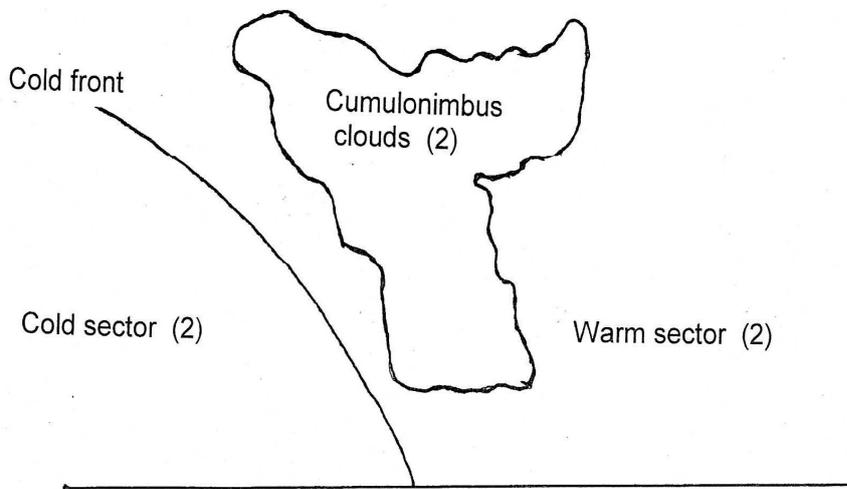
- A will experience a lower pressure than B. Air will move from high pressure to low pressure. (2)
- Moist air from B will move to A where it will heat up and rise to form more clouds resulting in more rainfall. (2) 3x2=(6)

1.4 1.4.1 It has a cold front and a warm front. (2) 1x2=(2)

1.4.2 West to east/eastwards. (2) 1x2=(2)

1.4.3 It is part of the westerly wind belt. (2) 1x2=(2)

1.4.4



3x2=(6)

1.4.5 Blessing

- Brings much needed rainfall to the South Western Cape in winter. (2)
- Water is used for domestic use. (2)
- Water is used for industrial use. (2)
- Water is used for agricultural use. (2)
- Brings rainfall at an ideal period for growing of products such as fruit. (2)

Curse

- Brings very cold weather which could have devastating effects on residents especially in the informal settlements. (2)
- Brings strong winds which causes a lot of destruction to homes etc. (2)
- Rainfall could lead to flooding (2)

(Any reasonable answer consisting of SIX points.

There must be at least ONE point from each section)

6x2=(12)

1.5	1.5.1	(a) River capture – when one river captures the headwaters of another river (2) [Concept]	1x2=(2)
		(b) Rejuvenation – it is the increase in the energy levels of the river, caused by increased runoff or change in gradient [Concept] (2)	1x2=(2)
	1.5.2	Abstraction (2)	1x2=(2)
	1.5.3	Tugela (2)	1x2=(2)
	1.5.4	– Tugela river has a greater volume of water. (2) – Tugela river has a steeper gradient than the other river. (2) – Tugela river has softer rock. (2) (Any ONE reason to substantiate your answer)	1x2=(2)
	1.5.5	Tugela River (2)	1x2=(2)
	1.5.6	It will have a greater volume of water. (2) It will have a larger drainage basin. (2)	2x2=(4)
1.6	1.6.1	Flooding – when a river overflows it's banks (2) [Concept]	1x2=(2)
	1.6.2	– The unusually high rainfall 300 mm in four days (2), would have caused a great amount of surface runoff, resulting in the water reaching the river very quickly. (2) – The recent droughts caused limited vegetation(2) which would have caused a great amount of surface runoff, resulting in the water reaching the river very quickly. (2) – The narrow drainage basin (2) caused the water to reach the river very quickly. (2) [Any ONE suitable answer]	2x2=(4)
	1.6.3	– Building of settlements results in less vegetation and more concrete surfaces (2) and therefore a greater runoff. (2) – Overgrazing removes a lot of the natural vegetation (2) resulting in greater runoff and soil erosion which increases the amount of silt in the water and reduces the water carrying capacity of the river. (2) – Mining removes and damages vegetation (2) resulting in greater runoff and soil erosion which increases the amount of silt in the water and reduces the water carrying capacity of the river. (2) [Any ONE suitable answer]	2x2=(4)

- 1.6.4 Hydrologists found the drainage discharge to be high prior to the flood. (2).
They warned the local council about the possibility of the disaster/flood that occurred. [Any ONE answer] 1x2=(2)
- 1.6.5 – Build settlements away from the river on a dry-point settlement. (2)
– Channel water from the river to other areas reducing the amount of water in the river. (2)
– Conserve the catchment areas in the upper regions of the river. (2)
– Do control/paddock grazing so as to limit the damage to the natural vegetation. (2)
– Control the amount of settlements being developed so that there is a balance between the natural environment and urban development. (2)
– Put laws in place to ensure that mining companies take steps to limit the damage to the natural environment. (2)
[Any suitable answer consisting of SIX points] 6x2=(12)
[100]

QUESTION 2

- 2.1 2.1.1 True (2)
- 2.1.2 False (2)
- 2.1.3 False (2)
- 2.1.4 False (2)
- 2.1.5 True (2) 5x2=(10)
- 2.2 A – Initial discharge (2)
B – Lag time (2)
C – Base flow (2)
D – Surface runoff (2)
E – Peak flow (2) 5x2=(10)
- 2.3 2.3.1 Winter. (2)
– Temperatures are low. (2)
– Cold fronts are affecting the country. (2)
– High-pressure systems dominate the land. (2)
– The South Indian High and South Atlantic High are in their northerly position. (2)
[Any ONE suitable reason] 2x2=(4)
- 2.3.2 South Atlantic High Pressure Cell (2) 1x2=(2)

2.3.3

	Durban	Port Nolloth	
Air temp	25 °C	16 °C	(2)
Dew point temp	15 °C	12 °C	(2)
Wind speed	10 knots	20 knots	(2)
Wind Direction	NW	SW	(2)
Cloud cover	8/8	4/8	(2)
Precipitation	Nil	Nil	(2)

[Any THREE comparisons]

3x2=(6)

2.3.4 They experience different currents, Durban the warm Mozambique current and Port Nolloth the cold Benguela current. (2)

1x2=(2)

2.4

2.4.1 Climate change – is a change in the statistical distribution of weather over a period of time [Concept]. (2)

1x2=(2)

2.4.2 Main aim – to get the 37 industrialized countries and the European community into a binding contract with an aim to reduce greenhouse gas emissions. The main ways to achieve this through:

- Green development. (2)
 - Use of environmental friendly fuels. (2)
- [Any ONE way]

2x2=(4)

2.4.3

- Use electricity sparingly e.g. put off lights in rooms you are not using. (2)
- Use unleaded petrol. (2)
- Avoid unnecessary removal of trees and other vegetation from your gardens (2)
- Re-use items in your house as much as possible. (2)

[Any THREE suitable answers].

3x2=(6)

2.4.4 Reluctance by rich countries:

- They want to remain economic powerhouses by maintaining economic growth. (2)
- They want to be economically competitive with other rich countries. (2)
- They want to limit the effect of the global economic crisis. (2)
- They want to undo any form of instability they have in their country. (2)

Developing countries are putting more pressure on rich countries than themselves:

- Problems such as global warming which is caused by greenhouse emissions affect developing countries more than rich countries. (2)
- Developing countries are less equipped to handle the effects of climate change (2)
- The effects of climate change, such as droughts, have far more devastating effects in the developing countries. (2)
- Developing countries don't want to limit their development to a great extent as development is of extreme importance for them. (2)

[Any reasonable answer consisting of SIX points.

There must be at least one point from each section]

6x2=(12)

2.5	2.5.1	Karoo. (2)	1x2=(2)
	2.5.2	H – Cliff. (2) I – Talus (2)	2x2=(4)
	2.5.3	H's (cliff) major geomorphological activity is erosion (2) whereas I's (talus) major geomorphological activity is deposition. (2)	2x2=(4)
	2.5.4	J is gentle and H very steep. (2) There will be less erosion at J. There will be more soil at J. [Any TWO answers]	2x2=(4)
	2.5.5	Cuestas form in inclined rock strata. This landscape has horizontal rock strata. (2)	1x2=(2)
2.6	2.6.1	(a) Drainage basin is an area drained by a river and its tributaries (2) [concept]	1x2=(2)
		(b) Catchment area is an area that 'catches' rainfall or snow to supply a river, aquifer or lake. (2) [concept]	1x2=(2)
	2.6.2	– Everyone can have access to water. (2) – Ecosystems of the river can remain healthy. (2) – To control flooding. (2) – To maintain sustainable development. (2) [Any TWO suitable answers]	2x2=(4)

- 2.6.3 – Control of what is being discharged into rivers should be done through legislation. (2)
 – Control the use of underground water sources. (2)
 – Control the clearing of vegetation. (2)
 – Control the building of new dams. (2)
 – Educate people about the need to conserve water. (2)
 [Any THREE suitable answers] 3x2=(6)
- 2.6.4 – Groundwater is polluted by human activities eg. Mining. (2)
 – Boreholes remove ground water resulting in less water flowing in the river. (2)
 – Runoff in agricultural areas contains high amounts of salt, pesticides and nutrients which are harmful to the aquatic life in the rivers. (2)
 – Removing of water for industries, mines, irrigation and domestic use reduces river habitats and affects ecological processes and the quality of water. (2)
 – Important wetlands are converted to crops, plantations, waste disposal sites, etc. reducing water to the rivers and polluting the wetlands. (2)
 – Recreational activities in the riparian zones disrupt the ecology and cause pollution. (2)
 – Massive concrete and tar surfaces reduce infiltration which reduces the lag time increasing the chances of floods in the urban areas. (2)
 [Any SIX suitable answers. Learners could explain SIX points on one activity] 6x2=(12)
[100]

SECTION B

QUESTION 3

- 3.1 3.1.1 C (2)
- 3.1.2 E (2)
- 3.1.3 A (2)
- 3.1.4 B (2)
- 3.1.5 D (2) 5x2=(10)

3.2	3.2.1	Natural (2)	
	3.2.2	disadvantage (2)	
	3.2.3	negatively (2)	
	3.2.4	ground water and municipal water (2)	
	3.2.5	contributes only a small percentage (2)	5x2=(10)
3.3	3.3.1	Actual point of a settlement. (2) [Concept]	1x2=(2)
	3.3.2	– Soil is very fertile (2) – High rainfall (2) [Accept any TWO suitable physical reasons]	2x2=(4)
	3.3.3	– Milk is a perishable product – a well developed transport system will allow the milk to remain fresh (2) – Could be expensive to keep milk cold – input cost rises (2) [Accept any TWO suitable answers]	2x2=(4)
	3.3.4	– Less jobs in rural areas (2) – People think there are more jobs in urban areas (2) – Farmers go bankrupt – forced to start a new career (2) [Accept any THREE suitable answers]	3x2=(6)
3.4	3.4.1	View of urban area from the side (2) [Concept]	1x2=(2)
	3.4.2	– Helps produce oxygen – green lungs (2) – For people to relax – escape busy city life (2) – Used as Office Parks – peaceful environment (2) – Safe haven for animals trapped in city (2) [Any TWO reasons – accept others]	2x2=(4)
	3.4.3	– Improve public transport - Gautrain / Rea Vaya Bus Rapid Transit System (2) – Lift clubs – tax incentives (2) – Fines for only one person in a car (2) – Synchronise robots (2) – One-way streets (2) – Widen streets (2) flexible working hours [Accept any TWO suitable answers]	2x2=(4)

- 3.4.4 (a) Old, run down buildings are given a new lease on life by changing the structure and redesign it to meet current requirements (2)
[Concept] 1x2=(2)
- (b) – Cleaning up of areas in city and provide better services (2)
– A zero tolerance approach to crime and illegal activities (2)
– Cultural projects – to attract business back to the area e.g. Newtown, etc. (2)
– Initiatives to kick-start development in the area (2)
– Opportunities for homeless people to get them off the streets – developing informal markets – formalizing and supporting car guards (2)
– Clean up buildings in CBD (2)
– Turning large office space into residential accommodation – close to work (2)
[Accept any SIX suitable answers] 6x2=(12)
- 3.5 3.5.1 Commercial (2) – product sold to factory – profit (2) / Number of cows on the farm (2) / Use modern machinery in dairy(2)
[Accept any TWO suitable answers] 2x2=(4)
- 3.5.2 – Milk is perishable - must be kept fresh (2)
– Expensive to keep milk cold (2)
– Keep production cost as low as possible (2)
[Accept other suitable answers] 1x2=(2)
- 3.5.3 – Job opportunities (2)
– Purchases products such as fertilizers, chemicals and machinery (2)
– Product is used in manufacturing - cheese (2)
– Makes use of other services – transport and storage (2)
– Research and development – linked to agriculture (2)
[Accept any TWO – accept other answers] 2x2=(4)
- 3.5.4 – Increase profits (2)
– Reduce the price of the product – consumer benefits (2)
[Any ONE – accept other suitable answers] 1x2=(2)

	3.5.5	Cheese/butter/cream/yogurt [Any ONE] (2)	1x2=(2)
	3.5.6	– Do not use heavy machinery (2) – Low noise levels (2) – Low levels of pollution (2) – Not dangerous activities (2) [Any ONE – accept other suitable answers]	1x2=(2)
3.6	3.6.1	To reduce poverty (2) and unemployment (2)	2x2=(4)
	3.6.2	– A lot of job opportunities were developed by building the necessary infrastructure (2) – Work means money and reduces poverty levels (2)	2x2=(4)
	3.6.3	– People learned new skills during construction (2) – Use skills in maintenance of new infrastructure and other developments in future (2)	2x2=(4)
	3.6.4	Positive – Economical growth – foreign capital invested (2) – Development for region (2) – Other countries invest money in SA (2) – Partnerships with other countries – people develop (2) – Technological development (2) – Cooperation with other countries – diplomatic relationship (2) Negative – Illegal immigrants – illegal trade (2) – Illegal immigrants steal our job opportunities (2) – Danger of Xenophobic attacks (2) – Unnecessary pressure on our resources (2) – Uneven development of economic regions (2) – Misuse of power (2) [Any SIX possible answers. There must be at least ONE positive or ONE negative answer]	6x2=(12) [100]

QUESTION 4

- | | | | |
|-----|-------|--|----------|
| 4.1 | 4.1.1 | C (2) | |
| | 4.1.2 | D (2) | |
| | 4.1.3 | A (2) | |
| | 4.1.4 | E (2) | |
| | 4.1.5 | B (2) | 5x2=(10) |
| 4.2 | 4.2.1 | A (2) | |
| | 4.2.2 | A (2) | |
| | 4.2.3 | C (2) | |
| | 4.2.4 | A (2) | |
| | 4.2.5 | D (2) | 5x2=(10) |
| 4.3 | 4.3.1 | Grid or gridiron pattern (2) | 1x2=(2) |
| | 4.3.2 | – Time consuming (2)
– 90° angle crossing – accidents (2)
– Easily leads to traffic congestion (2)
[Accept any ONE suitable answer] | 1x2=(2) |
| | 4.3.3 | – Easy lay-out (2)
– Don't get lost easily (2)
– Cheap to construct (2)
[Accept any ONE suitable answer] | 1x2=(2) |
| | 4.3.4 | – Sunday River surrounds the town (2)
– Access only from one side – control (2)
– Main access roads can be controlled (2)
[Any TWO – accept other suitable answers] | 2x2=(4) |
| | 4.3.5 | – Museums and other important sights (2)
– Historical value – old churches/monuments (2)
(Any ONE) | 1x2=(2) |
| | 4.3.6 | – All access roads lead to Graaff-Reinet (2)
– Services provided to surrounding people
(medical/police) (2)
– Situated in rural area of Eastern Cape (2)
[Accept TWO suitable answers] | 2x2=(4) |

4.4	4.4.1	A residential area that develops without any formal planning and that lacks basic services, e.g. sanitation, water, etc. (2) [Concept]	1x2=(2)
	4.4.2	<ul style="list-style-type: none"> – Any type of vendors (fruit / vegetables / newspapers) (2) – Selling any type of product (hangers / food) (2) – Shebeens / Spaza shops (2) – Day-care (2) – Storage (2) – Telephone services [Any ONE - Accept others]	1x2=(2)
	4.4.3	<ul style="list-style-type: none"> – Not registered as tax payers – loss of valuable income (2) – Sector not controlled (2) – Illegal activities – crime (2) [Accept any TWO suitable answers]	2x2=(4)
	4.4.4	<ul style="list-style-type: none"> – Low pay / not regularly / exploitation (2) – No benefits (medical/pension) – No resources (2) [Any TWO]	2x2=(4)
	4.4.5	<ul style="list-style-type: none"> – Develop skills / entrepreneurial skills (2) – Creating job opportunities (2) – Develop infrastructure (2) – Regulate industry – salaries, etc. (2) – Raise conscious levels on safety measures (2) – Provide medical services (2) – Policing (2) [Accept SIX possible answers]	6x2=(12)
4.5	4.5.1	Johannesburg (2) / Pretoria (Hatfield) (2) / OR Tambo International Airport (2)	3x2=(6)
	4.5.2	People are dropped off at various points / leave their cars at various points along the route – traffic spread out (2) Train transport them to the airport (2) Less traffic at the airport (2) [Accept any TWO suitable answers]	2x2=(4)
	4.5.3	<ul style="list-style-type: none"> – Scarce skills development unique to system (2) – International relations – trade (2) – New technology for our country (2) – Increases our tourism potential (2) [Accept any TWO suitable answers]	2x2=(4)
	4.5.4	They're surprised by the achievement / extent of the project / the tunnels were constructed underground – existing infrastructure on top (2)	1x2=(2)

4.6	4.6.1	When water is transferred from one drainage basin to another drainage basin (usually an arid region) (2) [Concept]	1x2=(2)
	4.6.2	Fish River (2) and Sundays River (2)	2x2=(4)
	4.6.3	Gariep Dam (2)	1x2=(2)
	4.6.4	<ul style="list-style-type: none"> – Eastern Cape is a semi-arid region – very little water / low rainfall (2) – The Gariep Dam gets its water from the Caledon and Orange Rivers – origin in Lesotho Highlands – high rainfall (2) 	2x2=(4)
	4.6.5	<ul style="list-style-type: none"> – Water is a scarce resource in the Eastern Cape (distribution, evaporation rate and variability) – short term cost high – demand higher than supply (2) – Awareness levels raised – water used in sustainable way – provide water to people in Eastern Cape – cost covered (2) – Awareness leads to people using water sparingly – especially the farmers – sustainable (2) – The availability of water leads to farmers producing more – pay better salaries – can afford water (2) – Agricultural sector more feasible – helps with the distribution of the population – more people in this region – plough back to local economy (2) – Water also available to industries in the Eastern Cape region – growth and contribute to local economy (2) – Help to break the poverty cycle (2) <p>[Any SIX possible answers. Accept other possible answers]</p>	6x2=(12)
			[100]