



**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2013

**GEOGRAPHY P1
MEMORANDUM**

MARKS: 225

This question paper consists of 12 pages.

SECTION A: PHYSICAL GEOGRAPHY: THE ATMOSPHERE AND GEOMORPHOLOGY

QUESTION 1

- | | | | | |
|-----|--------|---|-------------|------|
| 1.1 | 1.1.1 | false ✓ | | |
| | 1.1.2 | false ✓ | | |
| | 1.1.3 | true ✓ | | |
| | 1.1.4 | true ✓ | | |
| | 1.1.5 | true ✓ | | |
| | 1.1.6 | false ✓ | | |
| | 1.1.7 | false ✓ | | |
| | 1.1.8 | true ✓ | | |
| | 1.1.9 | false ✓ | | |
| | 1.1.10 | true ✓ | | |
| | 1.1.11 | true ✓ | | |
| | 1.1.12 | false ✓ | | |
| | 1.1.13 | true ✓ | | |
| | 1.1.14 | false ✓ | | |
| | 1.1.15 | true ✓ | (15 x 1) | (15) |
| 1.2 | 1.2.1 | Elliptical ✓✓ | (1 x 2) | (2) |
| | 1.2.2 | NH – summer solstice ✓
SH – winter solstice ✓ | (2 x 1) | (2) |
| | 1.2.3 | 21 December ✓
Summer ✓ | (2 x 1) | (2) |
| | 1.2.4 | <ul style="list-style-type: none"> • Warm ocean currents circulates warm water ✓ from the equator to the poles ✓ and increase temperatures. ✓ • Cold ocean currents circulates cold water ✓ from the poles to the equator ✓ and decrease temperatures. ✓ | (2 x 3) | (6) |
| 1.3 | 1.3.1 | <ul style="list-style-type: none"> • The low pressure belt in the equatorial region. ✓✓ • The ITCZ where warm air from the northeast meets warm air from the southeast – warm air rises. ✓✓ • There is no distinct seasonal change in temperature. ✓✓ • Extensive cloudcover and heavy rainfall keep temperature from rising above 33 °C. ✓✓ • The difference in day and night temperature is greater than the difference in summer and winter temperature. ✓✓ | (Any 1 x 2) | (2) |
| | 1.3.2 | Cloudcover that absorbs terrestrial radiation. ✓✓ | (1 x 2) | (2) |
| | 1.3.3 | <ul style="list-style-type: none"> • The ITCZ is a zone of rising air resulting in moist (humid) conditions. ✓✓ • Relatively high temperatures throughout the year. ✓✓ | (Any 1 x 2) | (2) |
| | 1.3.4 | The subtropical high pressure system formed by the Hadley and Ferrel cells. ✓✓ | (1 x 2) | (2) |

- 1.3.5 Location between 0° – 30° N $\checkmark\checkmark$
Where dry air is constantly descending from the Hadley and Ferrel cells $\checkmark\checkmark$ (2 x 2) (4)
- 1.3.6
- Interaction between warm tropical and cool polar air masses. $\checkmark\checkmark$
 - Polar front formed because these two air masses do not mix. $\checkmark\checkmark$
 - Cold front is formed when warm air rises over cold air. $\checkmark\checkmark$
 - During winter the frontal system moves northwards in the SH. $\checkmark\checkmark$
- (Any 3 x 2) (6)
- 1.4 1.4.1 A – mesa \checkmark
B – butte \checkmark
C – conical hill \checkmark

Process: scarp retreat/back wasting \checkmark (4 x 1) (4)
- 1.4.2 B is flat topped hill and C is pointed top hill $\checkmark\checkmark$
B has a resistant cap and C the resistant cap is removed $\checkmark\checkmark$ (Any 1 x 2) (2)
- 1.4.3
- Talus slope where rock falls and eroded debris from the cliff collects $\checkmark\checkmark$
 - Inaccessibility $\checkmark\checkmark$ (2 x 2) (4)
- 1.4.4
- Poor quality of the soil makes the cliff unsuitable for agriculture. $\checkmark\checkmark$
 - The instability of the cliff restricts commercial activities. $\checkmark\checkmark$
 - To stabilise the slope is expensive. $\checkmark\checkmark$
 - Used for recreation e.g. abseiling, rock climbing. $\checkmark\checkmark$ (Any 3 x 2) (6)
- 1.5 1.5.1 The movement of weathered material down slopes under the influence of gravity-(process) $\checkmark\checkmark$ (1 x 2) (2)
- 1.5.2
- Heavy rain saturate slope materials $\checkmark\checkmark$
 - Steepness of slope $\checkmark\checkmark$
 - Modify slope to construct buildings $\checkmark\checkmark$
 - Deforestation/removal of vegetation $\checkmark\checkmark$
 - Undercutting of slope by human excavation $\checkmark\checkmark$ (Any 2 x 2) (4)
- 1.5.3
- Accelerated erosion $\checkmark\checkmark$
 - Block flow of rivers $\checkmark\checkmark$
 - Damage vegetation and animal life $\checkmark\checkmark$
 - Can cause water level of dams to increase, damwalls break and flooding occurs $\checkmark\checkmark$
 - Expensive to clear debris and fix damage $\checkmark\checkmark$ (Any 2 x 2) (4)
- 1.5.4
- Plant trees and vegetation $\checkmark\checkmark$
 - Restrict activities along the slope $\checkmark\checkmark$
 - Deposit material at the foot of the slope and use retaining walls to stabilise the upper slopes $\checkmark\checkmark$
 - Stabilise slope with gabions and earth fill $\checkmark\checkmark$
 - Terracing of the slopes $\checkmark\checkmark$
 - Steel – mesh fencing $\checkmark\checkmark$
 - Anchor unstable rocks with nuts and bolts $\checkmark\checkmark$
 - Build drainage structures and canals to reduce run-off $\checkmark\checkmark$
- (Accept any other relevant answers) (Any 2 x 2) (4)

QUESTION 2

- 2.1 2.1.1 Climate change ✓
- 2.1.2 Heatwave ✓
- 2.1.3 Subsidence ✓
- 2.1.4 Jetstreams ✓
- 2.1.5 Weather ✓
- 2.1.6 Biome ✓
- 2.1.7 Desertification ✓
- 2.1.8 Dip slope ✓
- 2.1.9 Water movement ✓
- 2.1.10 Slope decline ✓
- 2.1.11 Weathering ✓
- 2.1.12 Talus slope ✓
- 2.1.13 Laccolith ✓
- 2.1.14 Knickpoint ✓
- 2.1.15 Hilly landscape ✓ (15 x 1) (15)
- 2.2 2.2.1 0° – Equatorial LP ✓
 30° S – Subtropical HP ✓
 60° S – Subpolar LP ✓
 90° S – Polar HP ✓
 2 – Ferrel cell ✓
 3 – Polar cell ✓ (6 x 1) (6)
- 2.2.2 Warm air rises near the equator and flows back to the poles ✓
 Descends near 30° N and S and flows back to the equator close to
 the earth's surface ✓ (2 x 1) (2)
- 2.2.3 The equator/no.6 ✓ (1 x 1) (1)
- 2.2.4 Westerlies ✓ (1 x 1) (1)
- 2.2.5 Windspeed = pressure gradient force ✓
 Wind direction – Coriolus force ✓ (2 x 1) (2)
- 2.2.6
- The westerlies blow between the Subtropical HP and the Subpolar LP ✓✓
 - NW – winds in the SH ✓✓
 - Greater Coriolus force results in a change of direction to SW-winds ✓✓
 - Blow at gale force speed ✓✓
 - Blow from warm to colder region and increase the temperature of the coastal areas ✓✓
 - With the migration of winds during winter, the Western Cape is under the influence of the Subpolar LP and the SW-winds bring rain to the area ✓✓ (Any 3 x 2) (6)

- 2.3 2.3.1 A long period of below-average or no rainfall in an area. ✓✓
(Concept) (1 x 2) (2)
- 2.3.2
- Drought has devastating effects on people and the environment ✓
 - Food shortages ✓
 - Food insecurity ✓
 - Famine ✓
 - People living in refugee camps ✓ (Any 2 x 1) (2)
- 2.3.3
- Reduced water vapour in the atmosphere. ✓
 - A strong high pressure system that remains over the region for a long period. ✓
 - Winds blowing over the region carry dry continental air. ✓
 - High pressure system prevents thunderstorms and rainfall over the region. ✓
 - El Niño causing dry conditions over an extended period. ✓
 - Reduced cloudcover that results in a high evaporation rate. ✓ (Any 2 x 1) (2)
- 2.3.4
- Building small dams ✓✓
 - Recharging ground by discharging rainwater into the ground. ✓✓
 - Drought monitoring by continuous observation of rainfall levels. ✓✓
 - Carefully planned land use to reduce erosion. ✓✓
 - Farmers should plant less water dependent plants. ✓✓
 - Restricting irrigation ✓✓
 - Rain harvesting by collecting rainwater from roofs, etc. ✓✓
 - Recycling of water ✓✓
 - Protection of soil by restoring the natural balances within the soil ✓✓
 - Enrichment of soil by restoring soil fertility ✓✓ (Any 2 x 2) (4)
- 2.3.5
- Restrict the flow of the river and reduce groundwater level ✓
 - Water pollution increase because less fresh water flows into rivers and dams ✓
 - Increased evapo-transpiration and higher temperatures results in reduced vegetation ✓
 - Loss of biodiversity ✓
 - Destruction of ecosystems and habitats ✓
 - Soil erosion increase ✓
 - Decrease in soil fertility ✓
 - Salinity of soil increases ✓ (Any 2 x 1) (2)
- 2.4 2.4.1 A – tor ✓
B – granite dome ✓ (2 x 1) (2)
- 2.4.2 Batholith ✓✓ (1 x 2) (2)
- 2.4.3
- Joints form in a granite batholith because of water seeping through the rock. ✓✓
 - Chemical weathering occurs along the joints, breaking the rock down and become more rounded. ✓✓
 - The core stones appear as a loose pile after the eroded material has been removed. ✓✓ (3 x 2) (6)

- 2.4.4 A pile of granite rock made up of round weathered boulders/core stones ✓✓
Have their base in the bedrock and is surrounded by weathered debris ✓✓ (2 x 2) (4)
- 2.4.5 Rockfalls ✓✓ (1 x 2) (2)
- 2.5 2.5.1 Dip slope ✓ (1 x 1) (1)
- 2.5.2 It has a gentle slope ✓✓ (1 x 2) (2)
- 2.5.3 (a) talus/debris/scree slope ✓ (1 x 1) (1)
- (b) • It is parallel to the original slope ✓✓
• It is a uniform slope ✓✓
• Debris from the crest and cliff accumulate ✓✓
• Deposition is the main activity ✓✓
• Remains at a constant angle ✓✓
• Subject to erosion ✓✓ (Any 2 x 2) (4)
- 2.5.4 • Ridges makes it difficult to construct transport networks. ✓
• Ridges form barriers to development. ✓
• The valleys and plains between ridges provide opportunities for farming, mining and settlement. ✓
• Scarp slopes cannot be used for farming as it is too steep and rocky. ✓
• Forestry on the dip slope since they do not require fertile soil. ✓
• Dip slopes are used for settlement because it is gentle. ✓
• Basin cuestas have artesian wells that form oil traps. ✓ (Any 6 x 1) (6)

[75]

SECTION B: DEVELOPMENT GEOGRAPHY, RESOURCES AND SUSTAINABILITY

QUESTION 3

3.1	3.1.1	Acid rain ✓		
	3.1.2	Topography ✓		
	3.1.3	Humus ✓		
	3.1.4	Carbon footprint ✓		
	3.1.5	Biomass ✓		
	3.1.6	Land degradation ✓		
	3.1.7	Sustainable energy ✓		
	3.1.8	Non-conventional ✓		
	3.1.9	Free trade ✓		
	3.1.10	Brandt ✓		
	3.1.11	Quotas ✓		
	3.1.12	Gross Domestic Product ✓		
	3.1.13	Import ✓		
	3.1.14	Trade surplus ✓		
	3.1.15	Human Development Index ✓	(15 x 1)	(15)
3.2	3.2.1	Development across the world is uneven. ✓✓	(1 x 2)	(2)
	3.2.2	Access to food resources ✓✓	(1 x 2)	(2)
	3.2.3	Panel 1: social development ✓ Panel 2: economic development ✓	(2 x 1)	(2)
	3.2.4	Panel 1: economically less developed ✓ Panel 2: economically more developed ✓	(1 x 1) (1 x 1)	(1) (1)
		Economically more developed countries have economic wealth and strong economies ✓ The social well-being is good and people have access to housing, services, education, food, health care and employment opportunities ✓	(Any 1 x 1)	(1)
		Economically less developed countries are poor and do not have strong economies ✓ Access to housing, education, food, health care, etc. are limited. ✓	(Any 1 x 1)	(1)
	3.2.5	Panel 1: limited access to food ✓ Panel 2: access to food ✓	(2 x 1)	(2)
	3.2.6	Panel 1: the traditional society ✓ Panel 2: mass production ✓	(2 x 1)	(2)

- 3.3 3.3.1
- Privatisation of state industries or corporations ✓
 - GEAR/NEPAD ✓
 - Public-Private Partnerships ✓
 - Industrial Development Corporations (IDC) ✓
 - Service contracts ✓
- (Accept other relevant examples) (Any 2 x 1) (2)
- 3.3.2
- Pass laws and regulations to promote economic development and to promote access to jobs to benefit all. ✓✓
 - Law enforcement to provide a framework that encourages business development and investment. ✓✓
 - Adopt development strategies that are sustainable that consider future needs, involve communities and supply new resources. ✓✓
- (Any 2 x 2) (4)
- 3.3.3
- Obtain funds from investors. ✓✓
Secure loans from commercial banks to supplement the financial assistance from the state. ✓✓ (2 x 2) (4)
- 3.3.4
- Central control by national government is diminishing while the role of provincial and local government increased. ✓✓
 - Free market trade and practices diminished the states ability to intervene in trade and to establish trade barriers. ✓✓
 - Multinationals and global organisations broker business and trade between nations. ✓✓ (3 x 2) (6)
- 3.4 3.4.1
- Forests/food ✓
Soil/land ✓ (2 x 1) (2)
- 3.4.2
- Population growth increased the demand for fuelwood ✓✓
 - Plantation agriculture and commercial farming leads to desertification. ✓✓ (Any 1 x 2) (2)
- 3.4.3
- It is their main source of energy. ✓✓
 - Forests are a renewable source of energy. ✓✓ (Any 1 x 2) (2)
- 3.4.4
- Deforestation results in soil exposed and soil erosion increase. ✓✓
 - Possibility of desertification increase. ✓✓
 - Fewer trees and vegetation result in environmental deprivation. ✓✓ (Any 2 x 2) (4)
- 3.4.5
- Forests are cut down to obtain more land for agriculture and Farming. ✓✓
 - Smaller trees are cut down therefore fewer trees reach maturity. ✓✓
 - Resource depletion of the forests. ✓✓ (Any 1 x 2) (2)
- 3.4.6
- It is over-used and depleted before it can be regenerated. ✓✓ (1 x 2) (2)

- 3.5 3.5.1
- It is used to generate more than 70% of South Africa's electricity. ✓
 - It is the country's primary source of energy. ✓
 - There is no suitable alternatives for coal as an energy source. ✓
 - South Africa has an abundant of coal reserves. ✓
 - Coal power stations are reliable and cheap to operate. ✓
- (Any 1 x 1) (1)
- 3.5.2
- Coal combustion releases greenhouse gasses in the atmosphere – air pollution. ✓✓
 - It contributes to global warming and formation of acid rain. ✓✓
 - Trucks that transport coal use diesel that increases air pollution and emission of greenhouse gasses. ✓✓
- (Any 2 x 2) (4)
- 3.5.3
- It is associated with nuclear weapons and war and is therefore not a safe way to generate energy ✓
 - It is radio-active and dangerous to humans and the environment ✓
- (Any 1 x 1) (1)
- 3.5.4
- Yes. ✓ renewable ✓
Water is renewable ✓
- (2 x 1) (2)
- 3.5.5
- The high cost of renewable energy technologies relative to the small amount of energy generated. ✓✓
- (1 x 2) (2)
- 3.5.6
- Local environmental projects to educate and inform individuals and increase awareness about energy management. ✓✓
 - Consult with communities so that everyone is involved in problem solving around energy management. ✓✓
 - Empower people by involving them in local, grassroot resource projects e.g. recycling and re-use resources. ✓✓
 - Promote green economies by encouraging individuals to buy locally made, environmentally friendly products. ✓✓
- (Any 3 x 2) (6)
- [75]**

QUESTION 4

- 4.1 4.1.1 C ✓
 4.1.2 B ✓
 4.1.3 B ✓
 4.1.4 B ✓
 4.1.5 A ✓
 4.1.6 A ✓
 4.1.7 B ✓
 4.1.8 C ✓
 4.1.9 C ✓
 4.1.10 C ✓
 4.1.11 B ✓
 4.1.12 C ✓
 4.1.13 C ✓
 4.1.14 C ✓
 4.1.15 B ✓ (15 x 1) (15)
- 4.2 4.2.1 Globalisation is the interconnection of places around the world in terms of economic, social, political and cultural ways of life. ✓✓ (1 x 2) (2)
- 4.2.2
- Factory is built in panel B ✓✓
 - Improvement in the standard of living as a result of job opportunities ✓✓
 - Improvement in services e.g. housing ✓✓
 - Infrastructure established ✓✓ (Any 1 x 2) (2)
- 4.2.3 Reduce poverty ✓✓ (1 x 2) (2)
- 4.2.4 Multinational/transnational corporation ✓✓ (1 x 2) (2)
- 4.2.5 Export-led development ✓✓ (1 x 2) (2)
- 4.2.6 **POSITIVE**
- Stimulates economic development ✓
 - Creates jobs ✓
 - Reduces poverty ✓
 - Improves standard of living ✓
 - Increases the flow of ideas between countries ✓
 - Stimulates foreign investment ✓ (Any 3 x 1) (3)
- NEGATIVE**
- Widened gap between rich and poor countries ✓
 - Foreign countries have economic control of local and domestic industries, commerce and agriculture ✓✓
 - Exploits the resources of less developed countries ✓
 - Exploits workers e.g. low wages and long working hours ✓
 - Cultures of indigenous societies are disrupted ✓
 - Rural-urban migration increased ✓ (Any 3 x 1) (3)

- 4.3 4.3.1 Aid which is directed towards alleviating the suffering of people. √√ (1 x 2) (2)
- 4.3.2 **POSITIVE** √
- To coördinate funding and resources as to provide an effective response to disasters and emergencies around the world. √√
 - It promotes preparedness for and prevention of the impact of disasters. √√
 - To identify priorities and sustainable solutions. √√
 - Implement long-term safety strategies. √√
 - Transporting necessities and providing food, water, sanitation and housing. √√
 - To alleviate poverty. √√ (Any 2 x 2) (4)
- NEGATIVE**
- Corruption as politicians and officials benefit from it instead of the local population. √√
 - Food sold on the black market. √√
 - Money donated has not been spent and is still in the bank. √√
 - Bribery and corruption resulted in the poor becoming poorer and the rich richer. √√ (Any 2 x 2) (4)
- 4.3.3
- Women manage food, water, fuelwood and households through raising children and caring for the family. √√
 - Poverty relief programs and world development issues depend on women to be successfully implemented e.g. food production, climate change etc. √√ (Any 1 x 2) (2)
- 4.3.4
- Humanitarian aid was given to women because they care for and ensured that children will be fed, i.e. the quality of women in social issues. √√
 - The role of women in development has been recognised, i.e. empowering of women. √√ (Any 1 x 2) (2)
- 4.4 4.4.1 The removal of soil by wind and water. √√ (1 x 2) (2)
- 4.4.2
- Overstocking √ and overgrazing √
 - Ploughing against the contours √
 - Absence of plant cover √ (Any 3 x 1) (3)
- 4.4.3 B √ (1 x 1) (1)
- 4.4.4
- Windbreaks √√
 - Limit livestock √√
 - More water points √√
 - Cattle pens √√
 - Rotational grazing √√
 - Encourage the growth of plant cover √√ (Any 2 x 2) (4)

4.4.5 **ENVIRONMENT**

- Less soil fertility ✓
- Reduce productivity of soil ✓
- Land degradation ✓
- Gullies become deeper because increased run-off remove topsoil ✓
- Deep gullies lower the watertable ✓
- Sedimentation deposited in dams decrease water capacity of dams ✓
- Destroy ecosystems and habitats ✓ (Any 3 x 1) (3)

HUMANS

- Land become unsustainable and cannot support people ✓
 - Decline in food production and food shortages ✓
 - Job losses on commercial farms ✓
 - Poverty and famine ✓
 - Health risks linked to the discharge of chemicals in downstream waterbodies ✓
 - Collapse in farm production leads to rapid urbanisation ✓
 - Social problems and conflicts due to increased competition for resources and services ✓
- (Refer to both environment and humans) (Any 3 x 1) (3)

- 4.5 4.5.1
- It has an abundance of sunshine ✓✓
 - Vast areas of available and sparsely populated land ✓✓
 - High incoming solar radiation due to the long sunshine period ✓✓ (Any 1 x 2) (2)
- 4.5.2
- Coastal areas receive less incoming solar radiation ✓✓
 - Windy conditions along coastal areas ✓✓
 - Ocean has a cooling effect on temperature ✓✓ (Any 1 x 2) (2)
- 4.5.3 Wind energy ✓✓ (1 x 2) (2)
- 4.5.4
- It reduces dependence on fossil fuels ✓✓
 - It is a renewable energy resource ✓✓
 - It is a sustainable resource ✓✓
 - It protects the environment ✓✓
 - It helps diversify energy resources ✓✓
 - It is a solution to global warming and climate change ✓✓
 - None or less air pollution ✓✓ (Any 2 x 2) (4)
- 4.5.5
- Energy production and usage will become cleaner and cheaper in future ✓✓
 - Will attract foreign investors ✓✓
 - Industries will grow ✓✓
 - Create job opportunities ✓✓
 - Promotes economic development ✓✓
 - Is well-suited to rural areas where electricity is lacking ✓✓ (Any 2 x 2) (4)

[75]**GRAND TOTAL: 225**