



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **NATIONAL SENIOR CERTIFICATE**

**GRADE 10**

**GEOGRAPHY P1**

**EXEMPLAR 2012**

**MEMORANDUM**

**MARKS: 225**

**This memorandum consists of 12 pages.**

**QUESTION 1**

1.1	1.1.1	(a) Insulation (1)	(1 x 1)	(1)
		(b) Terrestrial radiation (1)	(1 x 1)	(1)
		(c) Albedo (1)	(1 x 1)	(1)
	1.1.2	<b>X</b> – Scattering (1) <b>Y</b> – Reflection (1) <b>Z</b> – Absorption (1)	(3 x 1)	(3)
	1.1.3	CO <sub>2</sub> (1) Methane (1) Water vapour (1) [Any ONE]	(1 x 1)	(1)
	1.1.4	Oxygen (1)	(1 x 1)	(1)
1.2	1.2.1	Lithosphere/Crust (1)		
	1.2.2	Asthenosphere/Mantle (1)		
	1.2.3	Outer core (1)		
	1.2.4	Inner core (1)		
	1.2.5	Mantle (1)		
	1.2.6	Continental crust (1)		
	1.2.7	Crust (1)	(7 x 1)	(7)
1.3	1.3.1	<b>A</b> – Low Pressure (2) <b>C</b> – High Pressure (2)	(2 x 2)	(4)
	1.3.2	(a) Overcast (2) (b) WSW (2)	(1 x 2) (1 x 2)	(2) (2)
	1.3.3	Overcast (2) Air temperature and dew point temperature are close to each other (2)	(2 x 2)	(4)
	1.3.4	Isobars (2)	(1 x 2)	(2)
1.4	1.4.1	Cumulonimbus (2)	(1 x 2)	(2)
	1.4.2	Large, dense towering clouds (2) Large vertical extent (2) Anvil shaped (2) Could result in hail storm (2) [Any TWO]	(2 x 2)	(4)

	1.4.3	Strong convection currents (2) High moisture content (2) Large scale condensation (2) [Any TWO]	(2 x 2)	(4)
	1.4.4	Updrafts push water droplets from bottom to upper clouds (2) Temperature is below freezing and water droplets freeze (2) Ice pellet falls to bottom of the cloud where a layer of moisture clings on it (2) As long as the updrafts are strong this process will be repeated (2) When the pellets get too heavy it fall down (2)	(3 x 2)	(6)
1.5	1.5.1	Continental drift (2)	(1 x 2)	(2)
	1.5.2	Wegener (2)	(1 x 2)	(2)
	1.5.3	Pangaea (2)	(1 x 2)	(2)
	1.5.4	Rocks of similar type, age and formation are found on both continents (2) Fossils of similar small reptiles were found on both continents (2) Coast lines of the continents fit (2) Ridges halfway between continents from where they started spreading (2) Living animals in widely separated lands are similar (2) Paleomagnetism shows that the sea floor has spread away from these ridges (2) [Any TWO]	(2 x 2)	(4)
	1.5.5	The Earth's crust is divided into crustal plates (2) Plates rest on top of underlying mantle (2) Heat generates convection currents in the mantle (2) Plates move along convection currents that are created (2) Plates move away from one another or towards one another (2) [Any THREE]	(3 x 2)	(6)
1.6	1.6.1	Extinct (2)	(1 x 2)	(2)
	1.6.2	Crater (2)	(1 x 2)	(2)
	1.6.3	It is tall and steep sided (2) It consist of alternative layers of lava and ash (2)	(2 x 2)	(4)
	1.6.4	The area where volcanoes occur is very beautiful – resource for recreation and tourism (2) Income generated (2) Fertile soil (2) Farming can take place (2) Natural hot springs are used for health purposes (2) Steam from natural geysers can be used for generating electricity (2) [Any THREE]	(3 x 2)	(6)

**[75]**

**QUESTION 2**

2.1	2.1.1	Sedimentary						
	2.1.2	Igneous						
	2.1.3	Metamorphic						
	2.1.4	Folding						
	2.1.5	Warping						
	2.1.6	Faulting						
	2.1.7	Sedimentary	(7 x 1)	(7)				
2.2	2.2.1	Four (1)	(1 x 1)	(1)				
	2.2.2	<b>A</b> – Troposphere (1)						
		<b>B</b> – Tropopause (1)						
		<b>C</b> – Mesosphere (1)	(3 x 1)	(3)				
	2.2.3	10 km (1)	(1 x 1)	(1)				
	2.2.4	Stratosphere (1)	(1 x 1)	(1)				
2.3	2.3.1	Global warming is the increase in the average temperature of Earth's atmosphere (2)	(1 x 2)	(2)				
					2.3.2	They emit methane gas which contributes to the green house gases 20 times faster than carbon dioxide.	(1 x 2)	(2)
					2.3.3	Destroys rainforests (2)		
						Uses enormous quantities of fresh water (2)		
						Clearing vegetation for grazing (2)		
	Use of fertilizer for feed and the meat itself (2)							
Transportation of the product (2)								
The flatulence and the manure produce methane (2)								
They produce ammonia (2)								
[Any THREE]	(3 x 2)	(6)						

	2.3.4	Reduce the overall emissions of greenhouse gases (2) Use alternative sources of renewable energy (2) Reduce emission of methane from waste dumps and cattle ranching and CO <sub>2</sub> from transport sector (2) Protect and create additional carbon sinks for greenhouse gases (2) Promote sustainable forms of agriculture (2) Legislation to reduce emissions (2) Heavy fines (2) Reduce population numbers (2) Protect tropical/rain forests (2) Afforestation projects (2) Public education (2) [Any FOUR]	(4 x 2)	(8)
2.4	2.4.1	<b>A</b> (2)	(1 x 2)	(2)
	2.4.2	Air is heated more at <b>A</b> because the sun's rays strike directly there throughout the year (2) Heat concentrated on small surface area (2) Solar energy travels through smaller volume of atmosphere therefore less scattering, absorption and reflection (2) <b>[Learners may answer from opposite perspective]</b> [Any TWO]	(2 x 2)	(4)
	2.4.3	The temperature of these two ocean currents that flow past these two towns are different (2) On the east coast the warm Mozambique current flows past Durban (2) These waters warm the air on the east coast (2) On the west coast there is a cold Benguela current which flows past Port Nolloth (2) These waters cool the air on the west coast (2) [Any THREE]	(3 x 2)	(6)
2.5	2.5.1	Earthquakes can be defined as a series of Earth tremors or movements of great or small intensity in the Earth's crust (2) [Concept]	(1 x 2)	(2)
	2.5.2	Seismograph (2)	(1 x 2)	(2)
	2.5.3	Seismogram (2)	(1 x 2)	(2)
	2.5.4	Most buildings fall over (2) Bridges fall down (2) Underground pipes burst (2) Railway lines bend (2) Large rocks move (2) Small objects tossed into the air (2) Some objects swallowed up by Earth (2) Loss of life (2) Damage to infrastructure such as power lines and communication networks (2) [Any ONE]	(1 x 2)	(2)

	2.5.5	Destructive/convergent boundary (2)	(1 x 2)	(2)
	2.5.6	The intervals between major earthquakes is 1 000 years, and we have passed the time limit (2) The fault line runs underground at Port Shepstone through northern part of (2) KwaZulu-Natal (2)	(2 x 2)	(4)
	2.5.7	Durban is a build-up area with a high population density (2) High-density infrastructure that can be destroyed (2) Many industrial sites that can be destroyed (2) Durban is a coastal city and the possibility of a tsunami with the earthquake is great (2) No evacuation procedures in place/limited earthquake preparedness	(2 x 2)	(4)
2.6	2.6.1	Magma that cools and solidifies below the Earth's surface (2) [Concept]	(1 x 2)	(2)
	2.6.2	<b>A</b> – Batholith (2) <b>B</b> – Laccolith (2)	(2 x 2)	(4)
	2.6.3	<b>B</b> is mushroom-shaped and <b>C</b> is saucer-shaped (2)	(1 x 2)	(2)
	2.6.4	Sills form when magma solidifies in a horizontal column (2) Dykes form when magma solidifies in a vertical/diagonal column (2)	(2 x 2)	(4)
				<b>[75]</b>

**QUESTION 3**

3.1	3.1.1	Population density (1)		
	3.1.2	Literacy rate (1)		
	3.1.3	Brain Drain (1)		
	3.1.4	Population distribution (1)		
	3.1.5	Infant mortality (1)		
	3.1.6	Life expectancy (1)		
	3.1.7	Census (1)		
	3.1.8	Birth rate (1)	(8 x 1)	(8)
3.2	3.2.1	Ocean/sea (1)		
	3.2.2	Evaporation (1)		
	3.2.3	Condensation (1)		
	3.2.4	Precipitation (1)		
	3.2.5	Run-off (1)		
	3.2.6	Evapotranspiration (1)		
	3.2.7	Infiltration (1)	(7 x 1)	(7)
3.3	3.3.1	Developing (2)	(1 x 2)	(2)
	3.3.2	High birth rate (2) High death rate (2) High infant mortality (2) Export primary goods and import manufactured goods (2) Poor housing (2) High rate of adult illiteracy (2) Poor diet (2) Low level of energy consumption (2) Most people work in the primary sector (2) Low life expectancy (2) [Any ONE]	(1 x 2)	(2)
	3.3.3	High adult illiteracy/poor education (2) Tradition/culture (2) Marriages' at young age (2) Low social status of women (2) Lack of access to contraception (2) [Any TWO]	(2 x 2)	(4)
	3.3.4	Lack of housing and growth of informal settlements (2) Lack of jobs (2) Traffic congestion (2) Service delivery decreases (2) Overcrowding in hospitals, schools, etc. (2) Deterioration of environment (2) Higher crime rate (2) Standard of living drops (2) Food shortages (2) [Any TWO. Accept other problems]	(2 x 2)	(4)

	3.3.5	Reduce immigration (2) Eradicate poverty (2) Improve living standards (2) Population control (2) Fertility control (2) Education (2) Improve accessibility to contraceptives (2) [Any TWO. Accept other solutions]	(2 x 2)	(4)
3.4	3.4.1	Rural-urban migration (2)	(1 x 2)	(2)
	3.4.2	Drought (2) Decreasing soil fertility (2) High production costs (2) Farm murders (2) Lack of labour because of HIV/Aids (2) Lack of services and facilities (2) Few hospitals (2) Poor infrastructure (2) Few entertainment facilities/boredom (2) [Any TWO. Accept other]	(2 x 2)	(4)
	3.4.3	Traffic congestion (2) Housing shortages (2) Growth of informal settlements (2) Pollution (2) Rising crime levels (2) High unemployment (2) Social problems (2) [Any TWO. Accept other]	(2 x 2)	(4)
	3.4.4	Education in scientific farming (2) Provide government assistance during times of droughts (2) Regular policing/patrols (2) Provide proper services (2) Improve infrastructure (2) Provide more entertainment facilities (2) [Any TWO. Accept other]	(2 x 2)	(4)
3.5	3.5.1	Ocean currents originate from wind transferring water (2)	(1 x 2)	(2)
	3.5.2(a)	The ocean is the largest reservoir of water (2) The highest evaporation rate occurs from it (2) It replenishes our fresh water supply (2) [Any TWO]	(2 x 2)	(4)



	3.5.2(b)	Cheapest form of transport over long distances (2) Transport of bulky and heavy goods possible (2) Warm currents keep harbours ice free during winter so trade can continue (2) Cables laid on ocean floors for communication between countries (2) [Any TWO]	(2 x 2)	(4)
	3.5.3	Warm current increase the temperature and rainfall along east coast of SA (2) Cold current lower temperature and rainfall along west coast of SA (2) Coastal settlements have moderate temperatures/small temperature range (2) [Any TWO]	(2 x 2)	(4)
	3.5.4(a)	Illegal dumping (2) Faecal contamination/Sewage spills (2) Oil Spills (2) Heat emissions (2) [Any TWO]	(2 x 2)	(4)
	3.5.4(b)	Fish are poisoned (2) Negative impact on food chain (2) Throws ecosystem in imbalance (2) Seabirds and animals covered in oil (2) Contamination of oceans results in diseases (2) Oil spills pollute beaches and effects tourism (2) Negative impact on economy (2) Plants in the ocean are affected by the pollution and die and this effects the carbon dioxide and oxygen balance (2) Reduce food source (2) [Any TWO. Accept other]	(2 x 2)	(4)
3.6	3.6.1	Catching too many fish (2) [Concept]	(1 x 2)	(2)
	3.6.2	Larger species e.g. the whale that feeds on fish will have a shortage of food and die/disruption of food chain (2) Food supplies for man from the sea will also be low (2) Price of fish will go up and be unaffordable to many (2) Fish related industries will close down (2) Economic losses (2) [Any ONE]	(1 x 2)	(2)
	3.6.3	Fishing quotas (2) Have closed seasons for fishing (2) Larger holes in the fishing nets for commercial fishing industry (2) Policing of international waters (2) Fishing licences (2) Heavy fines for not adhering to regulations (2) [Any TWO]	(2 x 2)	(4)
				<b>[75]</b>

**QUESTION 4**

- |     |       |   |  |             |
|-----|-------|---|--|-------------|
| 4.1 | 4.1.1 | A (1)   |  |             |
|     | 4.1.2 | B (1)   |  |             |
|     | 4.1.3 | A (1)   |  |             |
|     | 4.1.4 | B (1)   |  |             |
|     | 4.1.5 | A (1)   |  |             |
|     | 4.1.6 | B (1)   |  |             |
|     | 4.1.7 | B (1)   |  | (7 x 1) (7) |
| 4.2 | 4.2.1 | 50 mm (1)   |  |             |
|     | 4.2.2 | 50 cumecs (1)   |  |             |
|     | 4.2.3 | Lag time (1)  |  |             |
|     | 4.2.4 | 01:50 (1)   |  |             |
|     | 4.2.5 | Rising limb (1)   |  |             |
|     | 4.2.6 | Falling limb  |  |             |
|     | 4.2.7 | midnight (1)<br>day two (1)   |  | (8 x 1) (8) |
| 4.3 | 4.3.1 | The number of people that die per 1 000 of the population in one year (2)<br>[Concept]  |  | (1 x 2) (2) |
|     | 4.3.2 | Increasing trend (2)<br>Increasing deaths of HIV/Aids (2)   |  | (2 x 2) (4) |
|     | 4.3.3 | Illiteracy (2)<br>Poverty (2)<br>Promiscuous behaviour (2)<br>Prostitution (2)<br>Intentionally infecting other people (2)<br>Denial (2)<br>Not using condoms (2)<br>Shortage of anti-retroviral drugs (2)<br>[Any TWO]   |  | (2 x 2) (4) |
|     | 4.3.4 | Awareness campaigns (2)<br>Education campaigns (2)<br>Improving literacy levels (2)<br>Availability of anti-retroviral (2)<br>Prevention programmes aimed at youth (2)<br>Promote abstinence (2)<br>Promote regular testing (2)<br>Providing condoms (2)<br>Needle exchange programmes (2)<br>[Any TWO] |  | (2 x 2) (4) |

4.4	4.4.1(a)	People that are forced to leave their country (2) [Concept]	(1 x 2)	(2)
	4.4.1(b)	Intense dislike of people of another country/fear of hatred of foreigners (2) [Concept]	(1 x 2)	(2)
	4.4.2	Nigeria/Tanzania/Mozambique/Swaziland/Lesotho/Namibia/Botswana/Congo/Somalia/Rwanda/Angola/Burundi (2) [Any ONE]	(1 x 2)	(2)
	4.4.3	Lack of job opportunities (2) Political strife (2) Corrupt government (2) Fear for safety (2) Land grabs (2) Food shortages (2) Economic instability (2) [Any TWO]	(2 x 2)	(4)
	4.4.4	Take the jobs of locals (2) Associated with crime/drugs (2) Offer cheaper labour (2) [Any TWO. Accept other]	(2 x 2)	(4)
	4.4.5	Fill a skills gap (2) Source of cheap labour supply (2) [Any ONE]	(1 x 2)	(2)
4.5	4.5.1	Tropical low (2)	(1 x 2)	(2)
	4.5.2	Extremely high rainfall (2) Mid-latitude cyclone (2) Cut-off low (2) Melting snow (2) Dam walls that break (2) People interfere with the natural flow of the river (2) Removal of vegetation in catchment areas (2) Poor drainage and storm water systems (2) [Any ONE]	(1 x 2)	(2)

4.5.3	Trees are uprooted (2) Families are left destitute (2) Cars are washed away (2) Loss of personal property (2) Roads are washed away (2) Infrastructure destroyed (2) Dam walls break (2) Disruption of electricity and water supply (2) Crops destroyed (2) Livestock drowns (2) Soil erosion (2) Disruption of communication networks (2) [Any TWO]	(2 x 2)	(4)
4.5.4(a)	Farm lands are flooded (2) Crops are damaged (2) Food has to be imported at a higher price (2) Livestock drowns (2) [Any TWO]	(2 x 2)	(4)
4.5.4(b)	Water is contaminated by pollutants washed into the river e.g. (2) Burst sewage pipes as well as from waste dumps (2) No access to fresh/clean water (2) Cut off from medical facilities (2) [Any TWO]	(2 x 2)	(4)
4.6	4.6.1	Irrigation and forestation (2)	(1 x 2) (2)
	4.6.2	Rainfall is low and unreliable in South Africa (2) High evaporation rates (2) Incorrect irrigation methods (2) Population growth (2) More people to feed (2) [Any TWO]	(2 x 2) (4)
	4.6.3	28,6% (2)	(1 x 2) (2)
	4.6.4	Building of dams to store water in non-rainy season (2) Reducing evaporation rates from dams (2) Water transfer schemes, e.g. TUVA, Lesotho Highlands (2) Proper water/drainage management (2) Surveys to find underground water (2) Water awareness programmes including all stake holders (2) Create a culture of water conservation (2) Roof top harvesting (2) Scientific farming methods (2) [Any THREE. Accept others]	(3 x 2) (6) <b>[75]</b>
			<b>TOTAL: 225</b>