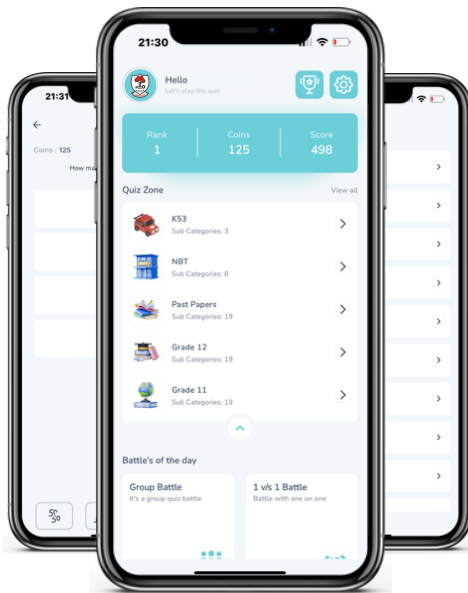




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**GRADE 11**

**NOVEMBER 2015**

**GEOGRAPHY P1  
MEMORANDUM**

**MARKS: 225**

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This memorandum consists of 12 pages.

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**SECTION A: THE ATMOSPHERE AND GEOMORPHOLOGY****QUESTION 1**

- 1.1 1.1.1 Solstice ✓  
 1.1.2 Jet stream ✓  
 1.1.3 Fohn ✓  
 1.1.4 Monsoon ✓  
 1.1.5 Degraded ✓  
 1.1.6 Maritime climate ✓  
 1.1.7 Orographic ✓  
 1.1.8 Intertropical Convergence zone ✓ (8 x 1) (8)
- 1.2 1.2.1 D Structural terrace ✓  
 1.2.2 G Bedding plane ✓  
 1.2.3 I Escarpment ✓  
 1.2.4 B Sheetwash ✓  
 1.2.5 H Peneplain ✓  
 1.2.6 C Canyon ✓  
 1.2.7 A Tectonic uplift ✓ (7 x 1) (7)
- 1.3 1.3.1 Planetary/Global/Primary winds ✓ (1 x 1) (1)  
 1.3.2 Coriolis force ✓ (1 x 1) (1)  
 1.3.3
  - It does not occur within 5° of the equator ✓
  - It is dependent on the strength of the wind/force is stronger when the wind is blowing faster ✓
  - It deflects the winds from their north-south direction ✓
  - The higher the pressure gradient, the greater the deflection ✓
 (Any 3 x 1) (3)  
 1.3.4
  - At the equator warm air expands and rises in convection currents ✓
  - Air from the subtropical high pressure regions are drawn towards the low pressure to replace the rising air ✓
 (2 x 1) (2)  
 1.3.5 **Hadley cell**
  - Hot air rises from the surface ✓✓
  - The risen air diverges in the upper air, moves poleward, and cools ✓✓
  - The cooled air subsides at about 30° north and south ✓✓
  - At the surface, the subsiding air diverges and some of the air returns to the equator ✓✓**Ferrel cell**
  - Air subsides at 30°; warms and diverges at the surface ✓✓
  - At about 60°, poleward moving warmer air meets cold air from the pole ✓✓
  - Colder air forces warmer air to rise causing the polar front to form at 60° north and south ✓✓

- Convergence causes air to rise, in the upper air the rising air diverges ✓✓
- The diverging air moves to the equator and then subsides at 30° north and south ✓✓

**Polar cell**

- Cold air subsides over the pole ✓✓
- It meets warm air from the Ferrel cell at about 60° ✓✓
- Converging air at 60° rises and moves polewards ✓✓

[ANY FOUR. MUST REFER TO ALL THREE CELLS. ACCEPT OTHER REASONABLE ANSWERS]

(Any 4 x 2) (8)

- 1.4 1.4.1 (a) A – High ✓  
C – Low ✓ (2 x 1) (2)
- (b) Cold ✓ (1 x 1) (1)
- 1.4.2 4 hectopascals/millibars ✓ (1 x 1) (1)
- 1.4.3 Each long line represents 10 knots and each short line represents 5 knots, therefore Cape Town has a wind speed of 15 knots and PE a wind speed of 10 knots ✓✓ (1 x 2) (2)
- 1.4.4 Marion island ✓ (1 x 1) (1)
- 1.4.5 The geostrophic wind blows parallel to the isobars at Marion island ✓✓ (1 x 2) (2)
- 1.4.6
- Temperature of 30 °C ✓
  - Dew point of 22 °C ✓
  - Wind direction of south west/south southwest ✓
  - Wind speed of 10 knots ✓
  - Cloud cover of  $\frac{3}{4}$  ✓
  - No precipitation ✓
  - Pressure gradient between 1012 and 1016 hectopascals ✓
- (Any 4 x 1) (4)
- 1.5 1.5.1 *Mass movement* refers to the downward movement of weathered material such as soil, stones and rocks on a slope as a result of the force of gravity ✓ [CONCEPT] (1 x 1) (1)
- 1.5.2 (a) Mudflow:  
High water content ✓ between 1 cm per second and 10 m per second ✓ (2 x 1) (2)
- (b) Rockfalls:  
Low water content ✓ between 1 m per second and 100 m per second ✓ (2 x 1) (2)

- 1.5.3
- Thin soils are unstable as there is less vegetation hence the movement is fast ✓✓
  - Unconsolidated sandy soils move more easily downhill and the movement is faster than thin soils ✓✓
  - Soils which are not porous become saturated and move downhill faster than unconsolidated sandy soils ✓✓ (Any 2 x 2) (4)

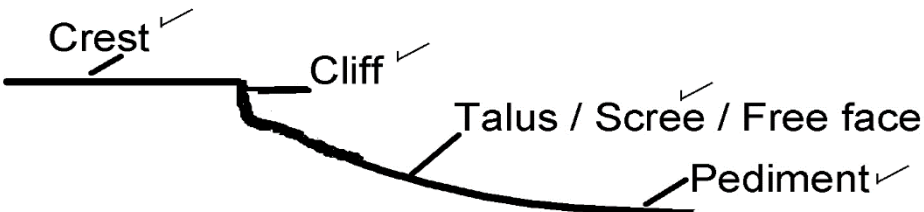
- 1.5.4
- Valuable soil is lost ✓✓
  - It takes years for vegetation to re-establish itself ✓✓
  - Habitats for animals are destroyed ✓✓
  - Forests and grasslands are destroyed ✓✓
  - Landslides and slumps can block river valleys and dam up rivers ✓✓
  - Sediment that reaches rivers reduces the quality of water, which can have a negative impact on fish in rivers ✓✓
  - Large landslides and slumps can alter the shape of the land, causing slopes to recede, mountains to become lower and valleys to be built up ✓✓ (Any 3 x 2) (6)

1.6 1.6.1 Mesas ✓ (1 x 1) (1)

1.6.2 Composed of resistant, ✓ horizontally lying strata ✓ (1 x 2) (2)

1.6.3 C has a pointed top instead of a flat top ✓✓ (1 x 2) (2)

1.6.4



(4 x 1) (4)

- 1.6.5
- Location of escarpment changes over time ✓✓
  - The cap rock of flat topped hills is not easily eroded ✓✓
  - The cap rock is undermined and eventually collapse ✓✓
  - A talus slope is formed ✓✓
  - Talus is chemically and mechanically weathered and removed through water and wind erosion ✓✓
  - The process of undermining resumes ✓✓ (Any 4 x 2) (8)

[75]

**QUESTION 2**

- 2.1 2.1.1 C ✓ influence of gravity on a slope.  
 2.1.2 A ✓ form in horizontal layers.  
 2.1.3 D ✓ shape of the land.  
 2.1.4 A ✓ important tourist attractions.  
 2.1.5 C ✓ develop in well-jointed igneous rock.  
 2.1.6 A ✓ horizontal and uniformly resistant to erosion.  
 2.1.7 B ✓ exogenic forces.  
 2.1.8 D ✓ primary erosion slopes. (8 x 1) (8)
- 2.2 2.2.1 hectopascals ✓  
 2.2.2 isobars ✓  
 2.2.3 pressure gradient ✓  
 2.2.4 (a) high pressure ✓  
 (b) low pressure ✓  
 2.2.5 four ✓  
 2.2.6 divergence ✓ (7 x 1) (7)
- 2.3 2.3.1 Insolation is incoming solar radiation ✓ (1 x 1) (1)  
 2.3.2 latitude ✓ (1 x 1) (1)  
 2.3.3 The angle at which the sun's rays strike the earth ✓ (1 x 1) (1)  
 2.3.4 Tropical zone/Equatorial low ✓ (1 x 1) (1)
- 2.3.5
- The smaller the angle, the more atmosphere for the rays to pass through ✓✓
  - Thus more radiation gets lost through absorption or reflection and less will reach point Y ✓✓
  - The smaller the angle of the incoming rays, the greater the radiation is spread over the earth, and less energy is received at Y ✓✓
- (Any 2 x 2) (4)
- 2.4 2.4.1 > 10 years which is the least frequent ✓ (1 x 1) (1)
- 2.4.2 DRC ✓ (1 x 1) (1)
- 2.4.3
- Poor farming techniques (accept examples) ✓✓
  - Deforestation ✓✓
  - Extensive urban landscapes ✓✓
  - Increase use of greenhouse gases ✓✓
- (Any 2 x 2) (4)
- 2.4.4 Due to the abnormal conditions of higher temperatures on the earth's surface, certain areas have now become areas that experience drought conditions ✓✓ (1 x 2) (2)
- 2.4.5
- Difference in population numbers ✓✓
  - Better water management strategies ✓✓
- (Accept any relevant answer) (Any 2 x 2) (4)

- 2.4.6
- Reduced crop production leads to famine and malnutrition ✓✓
  - People die from starvation and malnutrition ✓✓
  - Meat prices drop at first as farmers slaughter animals to avoid higher costs of feed ✓✓
  - Meat prices rise sharply as meat supplies become scarce ✓✓
  - Products bought by farmers become more expensive ✓✓
  - The number of exports is reduced ✓✓
  - Food has to be imported/Food insecurity ✓✓
  - Industries associated with farm products suffer ✓✓
  - Job losses in farming and industry result in more poverty ✓✓
  - There is less income from tourism ✓✓
  - More people move from rural areas to urban areas ✓✓
  - Urban overcrowding puts pressure on water resources in urban areas ✓✓
  - People die from heat stress ✓✓
  - Puts strain on government financial resources as they have to import food rather than use it on needy development projects ✓✓

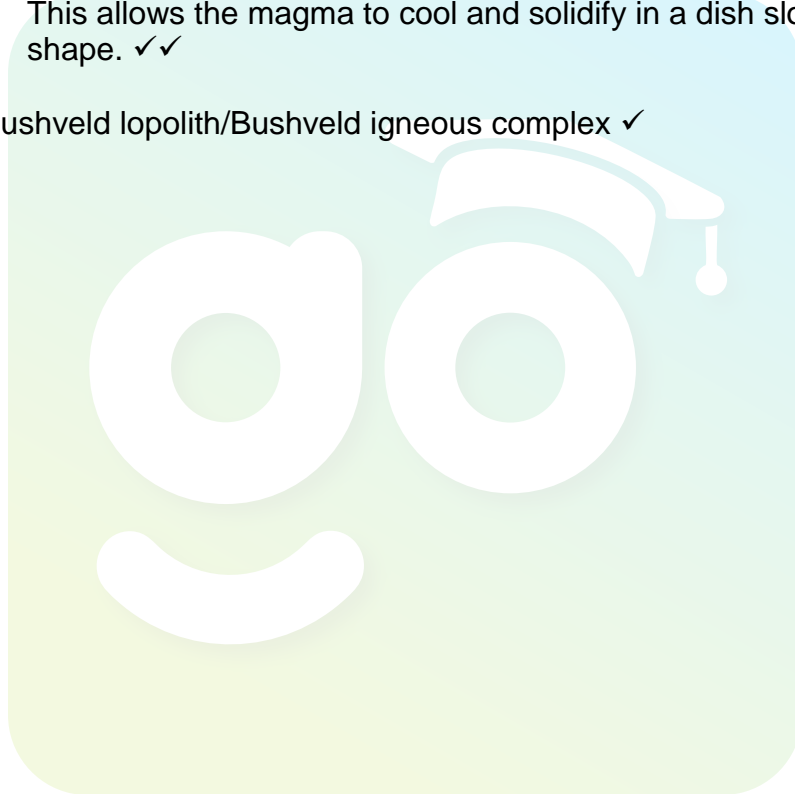
(Accept any relevant answer)

(Any 4 x 2) (8)

- 2.5 2.5.1 A – Cuesta ✓  
B – Homoclinal ridge ✓  
C – Hogsback ✓ (3 x 1) (3)
- 2.5.2 Sedimentary ✓ (1 x 1) (1)
- 2.5.3
- Inclined rocks with different resistance to erosion ✓✓
  - Soft rock erodes away more quickly than hard rock ✓✓ (2 x 2) (4)
- 2.5.4
- The dip slope is 10–25° to the horizontal ✓✓
  - Folding can result in cuesta basins and cuesta domes ✓✓ (2 x 2) (4)
- 2.5.5
- Farming can take place on dip slopes ✓✓
  - Roads and railways can be built parallel to these landscapes ✓✓
  - Gaps or poorts between homoclinal ridges can be good sites to build dams ✓✓
  - Cuesta basins yield artesian water ✓✓
  - Cuesta domes may contain oil and natural gas (fracking) ✓✓
  - Fertile valleys and plains between cuestas are suitable for human settlements ✓✓
  - These ridges are used for forestry, tourism, recreation and nature conservation ✓✓
  - These ridges can be used for defence purposes ✓✓
- (Accept any relevant answer) (4 x 2) (8)



- 2.6 2.6.1 *Intrusive igneous rocks* form when molten magma solidifies deep below the surface ✓ while *extrusive igneous rocks* form when magma flows/erupts onto the surface and solidifies rapidly due to contact with the air ✓ (2 x 1) (2)
- 2.6.2 A – Batholith ✓  
B – Laccolith ✓  
C – Pipe ✓ (3 x 1) (3)
- 2.6.3 A – Domes/Tors ✓ (1 x 1)  
C – Structural terraces/Mesas/Buttes/Plateau/Canyon ✓ (Any 1 x 1) (2)
- 2.6.4 • When magma is squeezed between layers of rock deep underground, the heat and pressure of the large body of magma causes the underlying rocks to sag. ✓✓  
• This allows the magma to cool and solidify in a dish slope or saucer shape. ✓✓ (2 x 2) (4)
- 2.6.5 Bushveld lopolith/Bushveld igneous complex ✓ (1 x 1) (1)
- [75]**





## SECTION B: DEVELOPMENT GEOGRAPHY AND RESOURCES AND SUSTAINABILITY

### QUESTION 3

- 3.1 3.1.1 NIC ✓  
 3.1.2 LDC ✓  
 3.1.3 LDC ✓  
 3.1.4 MDC ✓  
 3.1.5 MDC ✓  
 3.1.6 LDC ✓  
 3.1.7 MDC ✓  
 3.1.8 NIC ✓ (8 x 1) (8)
- 3.2 3.2.1 Unreliable ✓  
 3.2.2 Kyoto protocol ✓  
 3.2.3 Preservation ✓  
 3.2.4 Humus ✓  
 3.2.5 Afforestation ✓  
 3.2.6 Renewable ✓  
 3.2.7 Eskom ✓ (7 x 1) (7)
- 3.3 3.3.1 Activities that a given society considers appropriate for men and women ✓ [CONCEPT] (1 x 1) (1)
- 3.3.2  $33\frac{1}{3}\%$  (1 x 1) (1)
- 3.3.3
- Tradition dictates that women are responsible for growing and producing food ✓✓
  - Women are frequently excluded from decision making ✓✓
  - Women are excluded from higher education and learning ✓✓
  - Women have less access to resources like employment ✓✓
  - Women are not allowed to own land ✓✓
  - Women are seen as subordinate to men ✓✓
- (Accept any relevant answer) (Any 2 x 2) (4)
- 3.3.4
- New laws for women to receive better education ✓✓
  - Women should have access to land ownership ✓✓
  - Women should be employed in management positions ✓✓
  - Women should have better access health care facilities ✓✓
  - There should be more women in government to affect decision making ✓✓
- (Accept any relevant answer) (Any 4 x 2) (8)

- 3.4 3.4.1 Systems linking all the economies of different countries closer together ✓ [CONCEPT] (1 x 1) (2)
- 3.4.2
- Has encouraged the liberalisation of trade ✓✓
  - Better networks for sharing knowledge and fostering relationships ✓✓
  - Led to the regulation of global economic activities ✓✓
  - Free movement of people, goods and ideas between countries ✓✓
  - Stimulated production, trade and economic growth ✓✓
  - More people employed in a global workforce ✓✓
- (Accept any relevant answer) (Any 2 x 2) (4)
- 3.4.3
- Importing cheaper clothing from China is more viable ✓✓
  - This has rendered local business unprofitable ✓✓
- (Accept any relevant answer) (Any 2 x 2) (4)
- 3.4.4
- Offers low wages ✓✓
  - Highly productive workforce ✓✓
  - Sources cheaper raw materials ✓✓
  - They market good quality products ✓✓
- (Accept any relevant answer) (Any 2 x 2) (4)
- 3.5 3.5.1 A non-conventional energy source which is renewable ✓ (1 x 1) (1)
- 3.5.2
- Village is in a remote area ✓✓
  - It is not linked to Eskom's electricity grid ✓✓
  - Financial constraints ✓✓
- (Any 1 x 2) (2)
- 3.5.3 Solar panels ✓ (1 x 1) (1)
- 3.5.4
- Access to clean, safe energy at home ✓✓
  - Use of better cooking facilities ✓✓
  - Refrigerate food to reduce the risk of disease and illness ✓✓
  - Job creation in the energy sector ✓✓
- (Accept any relevant answer) (Any 2 x 2) (4)
- 3.5.5
- Reduces dependence on fossil fuels ✓✓
  - It is a renewable resource ✓✓
  - It is a sustainable resource ✓✓
  - Protects the environment ✓✓
  - Helps diversify energy resources ✓✓
  - It is a solution to global warming and climate change ✓✓
  - Helps benefit the achievement of the United Nations Millennium development goals ✓✓
  - It is compliant with the Kyoto protocol ✓✓
  - It fulfils the aims and objectives of Agenda 21 ✓✓
- (Accept any relevant answer) (Any 4 x 2) (8)

- 3.6 3.6.1 1 – O-horizon ✓  
2 – A-horizon ✓  
3 – B-horizon ✓  
4 – C-horizon ✓  
5 – R-horizon ✓ (5 x 1) (5)
- 3.6.2 There is no roots and surface vegetation to stop wind or water from carrying away soil ✓✓ (1 x 2) (2)
- 3.6.3 • It provides water for chemical weathering ✓✓  
• This influences biological processes ✓✓  
• The dissolved minerals and nutrients then trickle down through the soil, in the process called leaching ✓✓ (3 x 2) (6)
- 3.6.4 • Allows nutrients to return and fertility to be restored ✓✓  
• Animals feeding on plants that grow on fallow land will add manure to the land ✓✓ (2 x 2) (4)
- [75]**

**QUESTION 4**

- 4.1 4.1.1 Renewable ✓  
4.1.2 Renewable ✓  
4.1.3 Non-renewable ✓  
4.1.4 Non-renewable ✓  
4.1.5 Renewable ✓  
4.1.6 Renewable ✓  
4.1.7 Non-renewable ✓  
4.1.8 Renewable ✓ (8 x 1) (8)
- 4.2 4.2.1 Terms of trade ✓  
4.2.2 Balance of trade ✓  
4.2.3 Balance of payments ✓  
4.2.4 Trade bloc ✓  
4.2.5 Tariff ✓  
4.2.6 Protectionism ✓  
4.2.7 Liberalisation of trade ✓ (7 x 1) (7)
- 4.3 4.3.1 Poverty ✓  
Aids ✓  
Hunger ✓  
Debt ✓ (Any 2 x 1) (2)
- 4.3.2 The cartoonist depicts the challenges as obstacles/difficulties preventing Africa from attaining development (1 x 2) (2)
- 4.3.3 Aid given by wealthy nations towards stimulating the growth of developing countries ✓✓ (1 x 1) (1)

- 4.3.4
- Encourages corruption ✓✓
  - Aid does not reach poor or marginalised people ✓✓
  - Financial loans have high interest rates which lock African countries into high repayments for many years ✓✓
  - Human and physical resources are exploited ✓✓
  - Does not encourage self-reliance ✓✓
  - Local markets are distorted ✓✓
- (Accept any relevant answer) (Any 3 x 2) (6)
- 4.3.5
- Specialised medical personal can be sent in ✓✓
  - Developed countries would respond to the emergency and provide crisis aid ✓✓
  - Primary health care, example immunisation programs and training of nurses would be provided ✓✓
  - Help with education of the virus ✓✓
  - Provide technical support to governments ✓✓
  - Can help to protect human rights ✓✓
  - Can provide water, food, medical supplies, clothing, shelter, etc. ✓✓
  - Examples of international organisations like International Red Cross, Doctors without borders, United Nations Organisation, Gift of the Givers, World food program and others would help ✓✓
  - Aid would be people focused and not country-focused ✓✓
  - Countries can send in soldiers/army to man quarantine stations ✓✓
- (Any 4 x 2) (8)
- 4.4 4.4.1 They are in the process of still developing their economies ✓  
[CONCEPT] (1 x 1) (1)
- 4.4.2 Average amount of money available to each person in that country ✓  
**OR**  
The total value of goods and services produced in a country divided by the total population ✓ (Any 1 x 1) (1)
- 4.4.3
- Mass industrial growth led to growth in their economies ✓✓
  - Export orientated products lead to higher foreign income ✓✓
- (Any 1 x 2) (2)
- 4.4.4 It has the highest HDI ranking, which includes literacy as an indicator of development ✓✓ (1 x 2) (2)
- 4.4.5 Core-periphery model ✓✓ (1 x 1) (1)
- 4.4.6
- On a global scale, the USA, Europe and Japan are the major cores. The BRICS countries are the regions that span the distance between the core and the periphery ✓✓
  - On a national scale the capital cities of the BRICS countries are the major cores and the surrounding cities and towns are the peripheral areas from where they draw their resources ✓✓
- (2 x 2) (4)

- 4.5 4.5.1 The use of uranium to provide energy ✓✓ (1 x 1) (1)
- 4.5.2 It is generated from uranium which is a non-renewable mineral resource ✓✓ (1 x 1) (1)
- 4.5.3
- There has been an increase in population ✓✓
  - Coal is a non-renewable reserve and cannot meet all our needs ✓✓
  - There has been an increase in economic growth ✓✓ (Any 2 x 2) (4)
- 4.5.4
- Radiation is very dangerous to people and the environment ✓✓
  - Nuclear meltdown can occur releasing massive amounts of radiation ✓✓
  - Nuclear waste is very difficult to dispose of and is active for thousands of years ✓✓
  - Danger of tremors that can damage nuclear power stations and release dangerous radiation ✓✓
  - Reactors are very expensive to build and operate ✓✓
  - Danger of uranium being stolen and used to make nuclear weapons ✓✓
  - Threat of terror attacks on nuclear power stations ✓✓
- (Accept any relevant answer) (Any 4 x 2) (8)
- 4.6 4.6.1 Resources are substances, qualities or organisms that have use and value to a society ✓ (1 x 1) (1)
- 4.6.2
- Soil ✓
  - Land ✓
  - Trees ✓
  - Air ✓
  - Water ✓
- (Any 3 x 1) (3)
- 4.6.3
- Overpopulation ✓
  - Poverty ✓
  - Poor methods of resource use ✓
  - Unnecessary use of resources ✓
  - Development ✓
  - Pollution of resources ✓
  - Gaps in our understanding of the natural processes involved ✓
- (Any 2 x 2) (4)
- 4.6.4
- People must be educated about how to care of the environment and resources ✓✓
  - Use fewer resources ✓✓
  - Reduce waste production ✓✓
  - Develop alternative, less damaging methods of energy ✓✓
  - Develop more environmentally methods of farming ✓✓
- (Accept other relevant answers) (Any 3 x 2) (6)
- [75]

TOTAL: 225