basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

MEMORANDUM

FEBRUARY/MARCH 2014

MARKS: 300

This memorandum consists of 15 pages.

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SECTION A: CLIMATE AND WEATHER, FLUVIAL PROCESSES AND STRUCTURAL LANDFORMS

QUESTION 1

1.1.1 D (2)
1.1.2 B (2)
1.1.3 A (2)
1.1.4 B (2)
1.1.5 C (2) 5x2 (10)

1.2.1 B (2)
1.2.2 B (2)
1.2.3 A (2)
1.2.4 A (2)
1.2.5 B (2) 5x2 (10)

1.3.1 Kalahari/Continental High (2) 1x2 (2)

1.3.2 Forms when cold air sinks/subsides/anticyclonic subsidence (2) 1x2 (2)

1.3.3 A cold front is approaching (2) 1x2 (2)

1.3.4 Temperature drops (2)
Warm air rises and cumulonimbus clouds are formed (2)
Pressure decreases (2)
Humidity decreases (2)
Rain falls/possible thunderstorm (2)
Winds changes to south westerly direction (2)
[Any THREE] 3x2 (6)

1.3.5 Result from warm mid-latitude air colliding with cold polar air (2)
Friction is created at the polar front and a wave is formed (2)
Warm air is forced to rise (2)
The air begins to rotate clockwise (2)
[Any TWO] 2x2 (4)

1.3.6 The South Indian/Mauritius HP will force it southeast (2)
The apex of the triangle on the front line shows direction of movement (2)
[Any ONE] 1x2 (2)

1.4.1 Climate change refers to a change in the earth's atmospheric conditions over time (2)
[Concept] 1x2 (2)

1.4.2 VIPs driving in cars that emit pollutants into the atmosphere (2) 1x2 (2)

1.4.3 Burning of fossil fuels (2)
Increased carbon emissions (2)
Increased greenhouse gases (2)
The use of leaded petrol (2)
Gaseous emissions from industries (2)
Deforestation (2)
Urbanisation (2)
Veld fires (2)
Poor public transport encouraging people to use their cars (2)
[Any THREE. Accept other reasonable answers] 3x2 (6)

1.4.4 **Reduce in burning fossil fuels** (2) will reduce carbon emissions (2) therefore fewer greenhouse gases to trap heat (2)
Encourage the use of public transport (2) to reduce number of vehicles on road that release greenhouse gases (2)
Use bio-fuels (2) which will reduce carbon emissions (2)
Encourage the use of natural energy such as solar and wind energy (2) that does not release pollution into the atmosphere (2)
Conduct climate summits/conferences (2) to find solutions to greenhouse emissions (2)
Introduce awareness programmes (2) to encourage all people to work towards reducing greenhouse emissions (2)
Introduce laws (2) to prevent more than a certain volume of emissions (2)
Administer fines for not conforming (2) in order to stay within limitations of the law (2)
Reduce deforestation (2) to protect vegetation that absorbs greenhouse gases (2)
Introduce afforestation programmes (2) to increase vegetation to absorb greenhouse gases (2)
[Any THREE proposals plus explanation. Solution must be explained. Accept other] 6x2 (12)

1.5.1 Cross/transverse profile (2) 1x2 (2)

1.5.2 Perennial (2) 1x2 (2)

1.5.3 The river has average stream flow throughout (2) 1x2 (2)

1.5.4 The river has a wide floodplain (2)
The river has started to meander (2) 2x2 (4)

1.5.5 Flat land on the banks of the river (2)
Water will spread far from river channel (2)
Meander indicates river slowed down (2)
Slow flow of river allows for water level to rise (2)
High volume and low gradient affects the flow of the river (2)
[Any TWO] 2x2 (4)

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1.5.6 It has fertile soil (2)
Flat/level land (2)
Water in abundance (2)
Therefore good for agriculture/mechanisation (2)
[Any TWO] 2x2 (4)

1.6.1 Horizontal rock strata (2) 1x2 (2)

1.6.2 Karoo landscape (2) 1x2 (2)

1.6.3 Water/fluvial (2) 1x2 (2)

1.6.4 Feature **1** is made up of resistant rock layer on top and the underlying rock is soft (2)
Water will erode this landform vertically through at an area of weakness (2)
This will result in the formation of a mesa (landform 2) (2)
Mesa reduced from sides to form butte (landform 3) (2)
The butte has a hard cap rock (2)
When the resistant hard cap on the butte is eroded away, a conical hill (landform 4) is formed (2)
[Any TWO] 2x2 (4)

1.6.5 Successfully used for sheep/goat farming (2)
Deep canyons attract adventure tourists (2)
Holiday resorts in vicinity of canyons provides income for region (2)
Wide, flat plains between mesas and buttes are suitable for construction of infrastructure e.g. roads (2)
Limited use by humans (2)
Landscape is arid/dry and not suited for agriculture (2)
Thin layer of soil limits agriculture (2)
Arid/dry climate not generally suited for settlement development (2)
Deep canyons form obstructions for infrastructure development (2)
[Any SIX. Accept other reasonable answers] 6x2 (12)
[100]

QUESTION 2

2.1.1 Southern Hemisphere (2)
2.1.2 pressure gradient force (2)
2.1.3 anticlockwise (2)
2.1.4 clockwise (2)
2.1.5 Coriolis force (2) 5x2 (10)

2.2.1 Drainage basin (2)
2.2.2 Run-off /overland flow/surface run-off (2)
2.2.3 Watershed (2)
2.2.4 River mouth (2)
2.2.5 Infiltration (2) 5x2 (10)

2.3.1 Katabatic/Downslope wind (2) 1x2 (2)

2.3.2 C is formed during the night when the land surface cools rapidly due to terrestrial radiation (2)
Air in contact with land also cools down (2)
Cold air becomes heavy and dense (2)
The cold wind will sink down the sides of the valley (2)
[Any THREE] 3x2 (6)

2.3.3 The wind is warm because it is in contact with the valley that is warm (2)
Warm air is light and less dense (2)
Warm wind will move upslope (2)
[Any TWO] 2x2 (4)

2.3.4 <u>LOCATION OF SETTLEMENT</u>
Wind C causes temperature inversion (2)
Thus temperatures at the bottom of the valley are much colder in winter (2)
This will result in the formation of frost on the valley floor (2)
Houses will also be built away from the valley floor to avoid lower temperatures during the night in winter (2)
Houses will then be built on the thermal belt (2)
Formation of fog will prevent houses being built on valley floor (2)
Damp condition not good for human health (2)
Industries will also be built away from this area (2)
Industries can cause serious pollution in the valley because air cannot rise when the valley is cold (2)
<u>FARMING ACTIVITIES</u>
Frost will limit farmers from planting crops in the valley (2)
Frost damages crops, therefore only frost resistant crops will be planted (2)
Farming activities will take place on middle slopes (2)
[Any SIX. Must refer to both aspects] 6x2 (12)

2.4.1 A is a tropical cyclone/hurricane (2)
B is a tornado (2) 2x2 (4)

2.4.2 A large and B small in diameter (2)
A lasts days and B lasts a few minutes (2)
A not in direct contact with surface and B in direct contact with surface (2)
[Any TWO] 2x2 (4)

2.4.3 They are associated with strong winds (2)
Strong winds destroy infrastructure and buildings (2)
They are associated with thunderstorms (2)
Thunderstorms result in floods (2)
Storm surges result in coastal flooding (2)
[Any TWO] 2x2 (4)

2.4.4 The upward spiralling movement of air creates an artificial wall around the centre (2)
Small column of subsiding air in the centre (2)
This prevents surface air from rising and cooling (2)
Thus no condensation to produce clouds or rain (2)
[Any TWO] 2x2 (4)

2.5.1 Meander (2) 1x2 (2)

2.5.2 Erosion (2) 1x2 (2)

2.5.3 Water moves slower (2)
River loses energy (2)
River load thus deposited (2)
[Any TWO] 2x2 (4)

2.5.4 Deposition occurs in the meander neck (2)
It is cut out of the main stream (2)
It does not have supply of water from the river any more (2)
[Any TWO] 2x2 (4)

2.5.5 The lower course of the river has a horizontal or flat gradient (2)
Velocity of the river decreases (2)
River has a large volume of water (2)
To overcome gentle gradient the river starts to meander (2)
Deposition takes place as the gradient is minimal (2)
River erodes the outer bank and deposition takes place along the inner bank (2)
River erodes through the neck (2)
Oxbow lake remains behind and can dry up to form meander scar (2)
[Any TWO] 2x2 (4)

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2.6.1 Headward erosion (2) 1x2 (2)

2.6.2 Captor stream is a river that captures waters of another river (2)
[Concept] 1x2 (2)

2.6.3 X (2) 1x2 (2)

2.6.4 It has high volume of water (2)
It is on a steeper gradient (2)
It flows on less resistant rock (2)
Increase in rainfall (2)
[Any TWO] 2x2 (4)

2.6.5 Starts drying up (2)
Flows in valley much bigger than the amount of water it carries (2)
[Any ONE] 1x2 (2)

2.6.6 PHYSICAL IMPACT
The captured river will lose its source of water (2)
It will end up being too small for its valley/misfit stream (2)
Ultimately the river will dry up (2)
ECONOMIC IMPACT
It will negatively affect agriculture due to lack of water (2)
Cultivated lands will only be found at the elbow of capture (2)
Farmers on the side of the captured steam will stop farming (2)
Industrial activities cannot be practiced there due to lack of water (2)
Less food will be produced (2)
Economy will be negatively affected (2)
Less income for farming and industrial activities (2)
[Any SIX. Accept other reasonable answers. MUST refer at least ONCE to physical or economic impact] 6x2 (12)
[100]

SECTION B: PEOPLE AND PLACES: RURAL AND URBAN SETTLEMENT, PEOPLE AND THEIR NEEDS

QUESTION 3

3.1.1 C (2) 1x2 (2)
3.1.2 A (2) 1x2 (2)
3.1.3 B (2) 1x2 (2)
3.1.4 A (2) 1x2 (2)
3.1.5 C (2) 1x2 (2)

3.2.1 Durban-Pinetown (2) 1x2 (2)
3.2.2 PWV (2) 1x2 (2)
3.2.3 South Western Cape (2) 1x2 (2)
3.2.4 PWV (2) 1x2 (2)
3.2.5 PE-Uitenhage (2) 1x2 (2)

3.3.1 The maximum distance a customer is prepared to travel to buy a product (2)
[Concept] 1x2 (2)

3.3.2 The range for convenience goods is small (2)
The range for specialist goods is greater (2) 2x2 (4)

3.3.3 The demand for convenience goods is higher/greater (2)
The demand for specialist good is lower/smaller (2) 2x2 (4)

3.3.4 Convenience goods has a larger threshold population, because of the higher demand (2)
Specialist goods has a small threshold population, because of the lower demand (2) 2x2 (4)

3.4.1 Sector model/Hoyt (2) 1x2 (2)

3.4.2 Concentric pattern with wedges expanding outwards (2)
Sectors develop along main routes (2)
The CBD has a circular shape (2)
[Any ONE] 1x2 (2)

3.4.3 Access is difficult (2)
Lack of parking spaces (2)
Overcrowded (2)
High rentals (2)
Pollution (2)
Dilapidated/Falling to pieces (2)
High crime rate (2)
Inhabited by immigrants/vagrants (2)
[Any THREE] 3x2 (6)

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3.4.4 HIGH INCOME RESIDENTIAL AREAS:
Large plots of land (2)
Low density (2)
Close to recreational areas (2)
Usually away from CBD and industries (2)
LOW INCOME RESIDENTIAL AREAS:
High density (2)
Close to work/CBD/industries (2)
Close to public transport (2)
[ANY TWO. Must refer to both] 2x2 (4)

3.4.5 **Centrifugal forces** drive people and businesses away from the CBD (2)
People are put off by (only ONE example needed): pollution, traffic congestion, lack of space for expansion, high land values, high rates and taxes and inner-city decay (2)
Centripetal forces attract people businesses towards the CBD (2)
Functional convenience – some people find it convenient to live in apartments/flats close to the shops, government offices and other facilities in the CBD (2)
Functional prestige – Traditionally the CBD has been a prestigious area to do business in, so new businesses have usually sought out locations there (2)
Functional magnetism – certain functions benefit each other and therefore locate close to each other in the CBD (2)
Example: a shop that sells women's shoes to be located near a women's clothing store (2)
Land values determines where some land uses locate, e.g. the high land values in the CBD discourages residences but attract commercial functions (2)
Accessibility(how easily a place can be reached) – the CBD has the highest level of accessibility (2)
Heavy industries locate close to transport routes (2)
Specialised requirements – industries locate close to a source of water or flat land which makes construction easier (2)
Compatibility is the degree to which functions attract each other or repel each other (2)
Example: High income residential areas do not locate close to industries because they are incompatible (2)
Recreational facilities and residential areas are compatible (2)
[ANY SIX. Accept other. May discuss ONE factor in detail or have generalised discussion] 6x2 (12)

3.5.1 The total value of all goods and services produced within the boundary of the country by its work force in one year (2)
[Concept] 1x2 (2)

3.5.2 Primary = 6, 4 % (2) 1x2 (2)

3.5.3 Tertiary (2) 1x2 (2)

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3.5.4 **Infrastructure** – South Africa's well-maintained rail, road and flight networks allow for raw materials and finished products to be transported easily (2)
Markets – South Africa is in an accessible position to sell to local and regional markets as well as foreign markets (2)
Raw materials – Wide range of minerals are mined and used in heavy industry (2)
Agriculture is a major supplier of raw material for food manufacturing (2)
Labour – Large population provides skilled and unskilled labour (2)
Power – This is available due to the abundance of coal (2)
Water – The high rainfall and many perennial rivers together with inter-basin transfer schemes provide an abundant water supply (2)
Government policies – These have produced three programmes (SMMDP; SDI; IDZ) to help manufacturers through grants and tax incentives (2)
[ANY TWO] 2x2 (4)

3.5.5 Create jobs and thus increases the purchasing power of people (2)
Contributes to the GDP (2)
Foreign exchange earned is used to pay for products that are imported (2)
Provides an important market for raw materials of the primary sector (2)
Attract foreign investment (2)
Improve international trade relations (2)
[ANY TWO. Accept other] 2x2 (4)

3.6.1 When people have a permanent reliable supply of sustaining food (2)
[Concept] 1x2 (2)

3.6.2 Higher production costs in Africa (2)
Agricultural subsidies in rich countries (2)
Lower production costs in rich countries (2)
[ANY TWO] 2x2 (4)

3.6.3 Hunger/famine (2)
Farming of certain products not viable due to subsidies given in rich countries (2)
Cheaper to import poultry than to produce- due to subsidies (2)
Decreased productivity rates (2)
Poverty (2)
Conflict over resources (2)
[ANY TWO. Accept other] 2x2 (4)

3.6.4 Shortage of arable land (2)
Soil infertility (2)
Droughts (2)
Floods (2)
Incorrect farming methods (2)
Lack of funds for agricultural research (2)
High production costs (2)
Poor infrastructure (2)
Production of cash crops (2)
Corruption (2)
Conflict over resources (2)
Foreign competition (2)
[ANY TWO] 2x2 (4)

3.6.5 Might increase the food security (solution) for the growing population in Africa (2)
OR
Might not increase (not a solution) the food security (2)
ADVANTAGES
GM crops are able to survive in a greater range of climatic conditions (2)
GM crops have a greater nutritional value (2)
GM crops are more resistant to pests and diseases (2)
GM crops have a longer storage life (2)
More food per hectare can be produced (2)
DISADVANTAGES
New seeds have to be planted each year which is costly (2)
The effects of GM crops on food chains are not known (2)
The long term effects of GM crops on man's health are not known (2)
If GM seeds developed by multi-national companies they now have monopoly (2)
[ANY SIX. Accept other. Candidates' answer to introduce GM crops or not must be measured against their take on advantages and disadvantages] 6 x 2 (12)
[100]

QUESTION 4

4.1.1 Number of people/population (2)
4.1.2 Isolated farmstead (2)
4.1.3 Megalopolis (2)
4.1.4 Conurbation (2)
4.1.5 Hamlet (2) 5x2 (10)

4.2.1 E (2)
4.2.2 F (2)
4.2.3 A (2)
4.2.4 C (2)
4.2.5 B (2) 5x2 (10)

4.3.1 The increase in the percentage of people living in urban areas (2)
[Concept] 1x2 (2)

4.3.2 Kinshasa (2) 1x2 (2)

4.3.3 **Economical**: Employment opportunities (2)
Good infrastructure (2)
Social: Higher standard of living (2)
Good service delivery (2)
Entertainment facilities (2)
[Any TWO. Accept any other reasonable answers] 2x2 (4)

4.3.4 Increase in levels of crime (2)
Insufficient services (2)
Increase in air pollution (2)
Increase in noise pollution (2)
Waste management becomes uncontrollable (2)
Lack of housing leads to growth of informal settlements (2)
More homeless people (2)
Lack of purified water and sewage facilities lead to hygienic problems (2)
Rapid spread of diseases (2)
Traffic congestion (2)
Deterioration of infrastructure (2)
Uncontrolled growth of city/urban sprawl (2)
[Any THREE. Accept any other reasonable answers] 3x2 (6)

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4.3.5 **Inner city renewal**: Urban renewal projects (2)
Improve the appearance of the city e.g. tree planting (2)
Transport system upgrade R.B.T./Gautrain (2)
Upgrade reticulation system (2)
Access to water and sanitation services (2)
Industrial infrastructure must be replaced or renewed (2)
Improved policing (2)
Using CCTV cameras (2)
Introducing bylaws to control: illegal waste dumping (2), illegal street vendors (2) air pollution (2) and noise pollution (2)

Urban Planning: Plans for the placing of greenbelts/green spaces (2)
Control and reduce infectious diseases (2)
Proper placement of sewers and drainage systems
Reduce chemical and physical hazards (2)
Work towards developing a high-quality living environment (2)
Progress towards a more sustainable consumption of resources (2)
Future planning must take safety into account (2)

New towns/Self-help cities: Partnerships between local government and private enterprises (2)
Upliftment schemes in informal settlements by NGOs (2)

Strategies:
Decentralization policy (2)
National Physical Development Plan (2)
Good Hope Plan (2)
Tax Concessions and Regional Industrial Development Plan (2)
Small, Medium and Micro Enterprises (2)
Local Economic Development (2)
Spatial Development Initiative (2)
Urban Renewal – new towns (2)
Local Agenda 21- governance of urban settlements (2)
[Any SIX. Accept any other reasonable answers] 6x2 (12)

4.4.1 To provide security to all South Africans in terms of land ownership (2) 1x2 (2)

4.4.2 People can farm on land (2)
People can make a living/earn money from land (2)
People can have food for themselves (2)
[Any TWO] 2x2 (4)

4.4.3 HIV/Aids has affected land reform by accelerating poverty (2)
Increased medical/transport costs lead to people selling livestock and land (2)
Reduced ability to work on the farm (2)
Results in shortage of food (2)
Leads to poverty because of decreased family income (2)
[Any TWO. Accept any other reasonable answers] 2x2 (4)

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4.4.4 Communal ownership on farms (2)
Improve access to capital for farmers (2)
Provide training courses to improve skills in farming (2)
Promoting investment in the emerging farmer (2)
Teach sustainable farming methods (2)
Improve roads and transport facilities (2)
Provide basic services to elderly to attract retired people (2)
Provide employment opportunities (2)
Developing tourism in rural areas (2)
Special events such as festivals in rural towns (2)
Attract high-tech, footloose industries to rural areas (2)
Use physical assets such as mountains to attract people over weekends (2)
[Any TWO. Accept any other reasonable answers] 2x2 (4)

4.5.1 Orange (2) 1x2 (2)

4.5.2 1 630 million m^3 (2) 1x2 (2)

4.5.3 Tugela/Thukela (2) 1x2 (2)

4.5.4 Location of Gauteng as the economic HUB (2)
Industrial development (2)
Farming/irrigation (2)
Mining activities (2)
Greater demand for domestic use (2)
[Any TWO] 2x2 (4)

4.5.5 Situated in high pressure zone therefore low rainfall (2)
Unreliable rainfall (2)
High rainfall variability (2)
High evaporation rates (2)
Most rivers are non-perennial (2)
Rapidly growing population (2)
Demands for industrial development (2)
Irrigation in low rainfall areas (2)
[Any TWO] 2x2 (4)

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4.5.6 Farmers should use water saving techniques (2)
Reduce irrigation in marginal farming areas (2)
Recycling of grey water by industries (2)
Use waste water from homes and rainwater collected in tanks for gardening (2)
Repair leaking pipes and water mains (2)
Build storage dams in areas with low evaporation rates (2)
Inter-basin water transfer from areas of surplus to areas of shortage (2)
Control waste and litter reaching rivers from settlements (2)
Reduce the release of effluent from factories (2)
Limit release of pesticides and fertilisers from farms into rivers (2)
Manage waste water and sewage properly (2)
Introduce a proper integrated water management plan (2)
Protect wetlands (2)
Conservation of biodiversity (2)
Removal of alien plants (2)
[Any SIX. Accept other sustainable methods] 6x2 (12)

4.6.1 Primary (2) 1x2 (2)

4.6.2 Contribution by secondary and tertiary activities increased significantly (2) 1x2 (2)

4.6.3 Low/unreliable rainfall (in western half of country) (2)
High evaporation rates (in western half of country) (2)
Poor soils (in western half of country) (2)
[Any TWO] 2x2 (4)

4.6.4 Provides income for the country (2)
Earns foreign income (2)
Improves the balance of trade (2)
[Any ONE] 1x2 (2)

4.6.5 Low wages (2)
Labour disputes (2)
Strikes (2)
Farming activities often seasonal (2)
[Any TWO. Accept any other reasonable answers] 2x2 (4)
[100]

TOTAL: 300

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