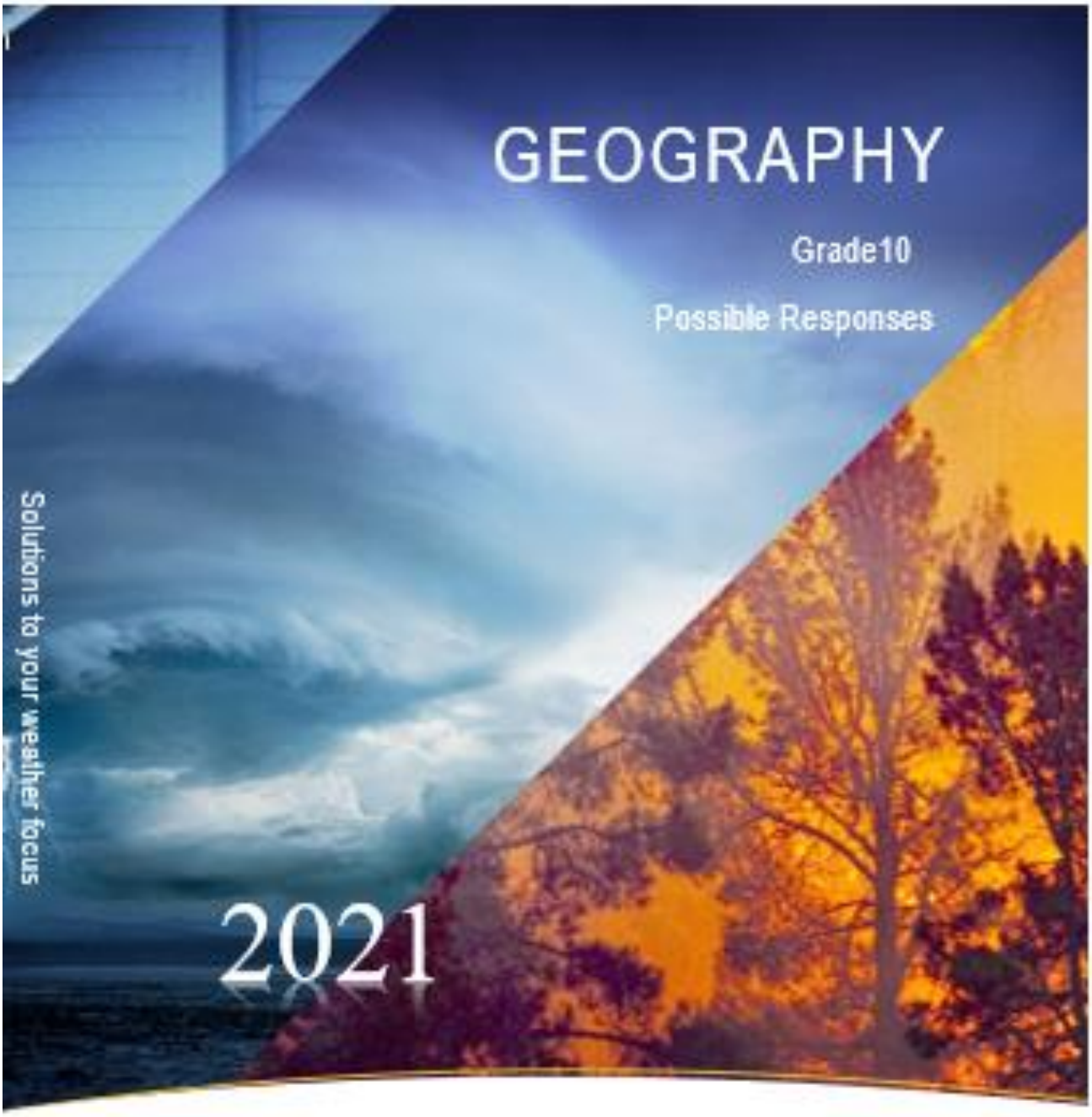

GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GRADE 10

TERM 1

THE ATMOSPHERE

MARKING GUIDELINE

1.1.1 Troposphere (1)

1.1.2 Stratopause (1)

1.1.3 Ozone (1)

1.1.4 B (1)

1.1.5 A and C (2)

1.1.6 Thermosphere (1)

1.1.7 D/ Troposphere (1)

1.1.8 Troposphere (1) (8 x 1) (8)

1.2.1 It is the layer of gases, commonly known as air, retained by Earth's gravity, surrounding the planet Earth. (2).
(1 x 1) (1)

1.2.2 Nitrogen (1) (1 x 1) (1)

1.2.3 Fly above the turbulence (2) (1 x 2) (2)

1.2.4 As **altitude** increases, the amount of gas molecules in the **air** decreases (2)
The **air** becomes less dense than **air** nearer to sea level. This is what meteorologists and mountaineers mean by "thin **air**." (2)
[Any ONE] (1 x 2) (2)

1.2.5 Produces weather (2)
We breath oxygen in from this layer (2)
Regulate gases such as oxygen and carbon dioxide (2) and water vapor that are essential for life on earth.
Produce water through rain (2)
Where plant grow and produces food (2) (4 x 2) (8)

1.3.1	D - Stratosphere (1) E – Thermosphere (1)	(2 x 1)	(2)
1.3.2	Ozone – is a highly reactive gas composed of three oxygen atoms. (2)	(1 x 2)	(2)
1.3.3	Stratosphere (1)	(1 x 1)	(1)
1.3.4	Absorption of the UV- Ultraviolet rays (2)	(1 x 2)	(2)
1.3.5	Socio-environmental effects Melting ice caps and rising sea levels (2) Reduced habitats for polar bears (2) Increase risks of cataracts (2) Early aging and skin cancers (2) Preventative measures Using ozone friendly products that are CFC free (2) Changing to greener electricity: - solar, wind, hydroelectricity (2) Reduce the release of carbon emissions (2) Encouraging the planting of trees (2) [Any FOUR, must indicate EFFECTS and PREVENTATIVE MEASURES]	(4 x 2)	(8)
1.4.1	Ozone – is a highly reactive gas composed of three oxygen atoms. (2)	(1 x 1)	(1)
1.4.2	Consist of 3 oxygen molecules (2)	(1 x 2)	(2)
1.4.3	Dobson (1)	(1 x 1)	(1)
1.4.4	**Ozone depletion**, gradual thinning of Earth's **ozone layer** in the upper atmosphere caused by the release of chemical compounds containing gaseous chlorine or bromine from industry and other human activities	(1 x 2)	(2)
1.4.5	It is not a hole, just thinning of the ozone layer (2)	(1 x 2)	(2)
1.4.6	Cause skin cancer (2) Cataracts in human and animal eyes (2) Lowering the immune system (2) Increased incidence of malaria (2) [Any THREE]	(3 x 2)	(6)

1.5.1	**Ozone depletion**, gradual thinning of Earth's **ozone layer** in the upper atmosphere	(1 x 2)	(2)
1.5.2	CO2 (1) CFC (1) methane (1) [Any TWO]	(2 x 1)	(2)
1.5.3	Use of ozone friendly products (2) Reduce the production of CFK (2) Plant more trees to release oxygen through photosynthesis (2) Strict regulations to reduce the emissions of cars (2) and Regulations against the burn of fossil fuels (2) Use of solar and wind energy to reduce the emissions of the burning of coal (2) [Any THREE]	(3 x 2)	(6)
1.5.4	If we don't look after our atmosphere it will be dangerous for the children to look up because of more UV rays will come through the ozone layer (2)	(1 x 2)	(2)
1.5.5	Humans: Cause skin cancer (2) Cataracts in human and animal eyes (2) Lowering the immune system (2) Increased incidence of malaria (2) Environment: Kill phytoplankton in ocean (2) Disrupt marine food web (2) Reduce growth in plants (2) [Any FOUR, must refer to both Human and environment]	(4 x 2)	(8)
1.6.1	The layer of gases surrounding the Earth's surface (2)	(1 x 2)	(2)
1.6.2	Nitrogen - 78% (1) Oxygen – 21% (1) Argon – 0.9% (1)	(3 x 1)	(3)
1.6.3	Water vapour (1)	(1 x 1)	(1)
1.6.4	The quantity of water vapour in the atmosphere depends on the amount of evaporation in that area/ amount changes constantly (2)	(1 x 2)	(2)

1.6.5	Troposphere – (1) Reason: 1000mb air pressure (compared to 10mb in the stratosphere (2)	(1 + 2)	(3)
1.6.6	Gravitation force holds the atmosphere close to the earth's surface (2)	(1 x 2)	
1.6.7	The temperature increase with altitude (2)	(1 x 2)	(2)
1.6.8	Temperature inversion (2)	(1 x 2)	(2)

1.7.1 C (1)

1.7.2 CO3 (1)

1.7.3 A (1)

1.7.4 D (1)

1.7.5 F (1)

1.7.6 E (1)

1.7.7 H (1)

1.7.8	B (1)	(8 x 1)	(8)

2.1.1	Insolation (1)	(1 x 1)	(1)
2.1.2	Absorption	(1 x 1)	(1)
2.1.3	Heat emitted by the Earth's surface and atmosphere is called **terrestrial** ***(2)***	(1 x 2)	(2)
2.1.3	Absorption (2) Reflection (2) Scattering (2)	(3 x 2)	(6)
2.1.4	Clouds are water droplets that will reflect (2) and scatter the incoming heat (2)	(2 x 2)	(4)

2.2.1	Insolation – incoming heat from the sun (1) Heat releases from the earth into the atmosphere (1)	(2 x 1)	(2)
2.2.2	Dust and smoke particles (2)	(1 x 2)	(2)
2.2.3	Absorption (1) and reflection (1)	(2 x 1)	(2)
2.2.4	100% (2)	(1 x 2)	(2)
2.2.5	• Scattering: Occurs when small particles and gases diffuse (split up) the sun's rays in random directions without altering the wavelength at all. (2) • Absorption: **T**he process whereby clouds, and solid matter absorb energy (2) • Reflection: **T**he act of sending the sun's energy back in the direction it came from without much absorption. (2) • Terrestrial radiation: The atmosphere in turn is heated by radiation from the earth (2)	(4 x 2)	(8)
3.1.1	Equatorial (1)		
3.1.2	Polar (1)		
3.1.3	East (1)		
3.1.4	Ocean currents (1)		
3.1.5	Latitude (1)		
3.1.6	Distance from the ocean (1)		
3.1.7	Small (1)	(7 x 1)	(7)
3.2.1	1- Warm Agulhas (1) 2 – Cold Benguela (1)	(2 x 1)	(2)
3.2.2	Cape Town is colder than Durban (2) Reason: The cold Benguela current influence the coastal temperature (2) OR Durban is warmer than Cape Town (2) Reason: The warm Benguela current influence the coastal temperature (2)	(2 x 2)	(4)

3.2.3 Durban will have higher rainfall as it receives the moisture from the warm Indian Ocean and Agulhas current (2)
Port Nolloth will have lower rainfall because of the cold ocean and Benguela current that is dry (2) (2 x 2) (4)

3.3.1 Kimberley (1) 15˚C (1) (2 x 1) (2)

3.3.2 Agulhas/Mozambique current (1) (1 x 1) (1)

3.3.3 Warm sea current heats (2) the atmosphere adjacent to the current.
It also increases the chances of rainfall (2) due to confection of warm, moist air. (2 x 2) (4)

3.3.4 Climate near the ocean where the range between the maximum and minimum is very small. (1) (1 x 1) (1)

3.3.5 **JOHANNESBURG** is situated in the continent and at a higher sea level (2).
It is also situated closer to the equator.
The temperature of Johannesburg has a big annual range of 10˚C (2).
This is because soil loses heat faster than water and the height is also a factor and with height temperature decreases (2).

Durban is situated at sea level next to a warm sea current (2)
The temperature of Durban has a small annual range of 7.2 ˚C (2)
Water holds heat longer and helps to keep the range smaller.
(Any applicable answer. Must refer to both Durban and Johannesburg.) (4 x 2) (8)

3.4.1 Altitude (1) (1 x 1) (1)

3.4.2 Tropical rain forest is warmer than Tundra (2) (1 x 2) (2)

3.4.3 The higher you go the less vegetation there will be (2)
Higher altitude is colder and might be cover with snow (2)
The lower the altitude the more vegetation there will be (2)
Warmer temperature at lower altitude (2) (4 x 2) (8)

3.4.4 The aspect (2) (1 x 2) (2)

4.1.1 **Climate change** is a long-term change in the average weather patterns that have come to define Earth's local, regional, and global climates (2)
Global warming: gradual increase in the overall temperature of the earth's atmosphere (2) (2 x 2) (4)

4.1.2 Burning of fossil fuels, releases carbon dioxide into the atmosphere (2)
Deforestation: trees convert carbon dioxide into oxygen (2)
Destruction of the ozone layer (2)
Increased pollutants that trap heat. (2)
Greater demand for cattle results in more methane gas. (2)
Use of CFC's in the manufacturing industry. (2)
Use of more cars and human activities that generate heat. (2)
Rapid population growth (2)
[Any TWO] (2 x 2) (4)

4.1.3 The warmer temperature and more rainfall increase the spread of malaria (2) (1 x 2) (2)

4.1.4 Paragraph reducing global warming:

Reduce the amount of greenhouse gasses released✓✓ by reducing burning of fossil fuels
Planting more trees to absorb CO2✓✓ Encourage government to make more use of renewable energy resources✓✓ Make use of more non- polluting energy resources e.g. wind power instead of coal driven power stations✓✓
Industries must reduce pollutants released into the atmosphere / place filters on chimneys to absorb smoke
(Teachers may also accept other answers) (4 x 2) (8)

4.2.1 hungry people / people dependent on food aid (1) (anyone)
predicted to lose 15% of wheat crops / crop yields decline (1) (anyone)
temperature increase / soil erosion / cracked hard ground/ floods (1) (any ONE) (3 x 2) (6)

4.2.2 1-2°C (2) (1 x 2) 2)

4.2.3 Greenhouse effect refers to the trapping of heat by greenhouse gases (carbon dioxide and water vapour and CFC etc) drastically warming up the atmosphere (**concept)** (2)

MUST EXPLAIN - **CHOOSE 1 FROM EACH, AND 1 REMAINING FOR ANY**
PEOPLE - causes global warming/ increased temperatures (2)
spread of diseases related to high temperatures (2)/
Uncomfortable temperatures (2)
Floods destroy properties (2)
floods take lives/ droughts causes imposed water restrictions (2)
droughts lower water level hence less water for use by people (2) people lose jobs/ increased food prices / decreases crop yields /
(**accept other**)

ENVIRONMENT - soil erosion (2)
disrupted ecosystems (2)
water levels lowered in rivers etc (2)
plants and animals become extinct (2)
animals migrate / increases desertification (2)
(**accept other answer** as correct)

(4 x 2) (8)

4.3.1 Global warming = the rapid increase in average atmospheric temperature (Concept) (2) (1 x 2) (2)

4.3.2 Increased fossil fuels from cars (2)
airplanes (2)
industries (factories) (2)
more CO2 / methane (2)
increased CFC gasses

(2 x 2) (4)

4.3.3 Global warming will result in the earth's temp increasing (2)
Polar ice caps melting (2)
Polar bears may drown - Sea level will rise (because of ice caps melting) (2)
Coastal cities will flood (because of rising sea levels) (2)
Weather patterns may change (**2)**
certain species of plants and animals will be affected (2)
Extinction of certain species (2)
droughts may be experienced – which may lead to loss of money, poverty, famine, malnutrition and even death (2)
(Any TWO]

(2 x 2) (4)

4.3.4	Reduce the amount of greenhouse gasses released□□ by reducing burning of fossil fuels (2) Planting more trees to absorb CO2 (2) Encourage government to make more use of renewable energy resources (2) Make use of more non-polluting energy resources e.g. wind power instead of coal driven power stations (2) Industries must reduce pollutants released into the atmosphere / place filters on chimneys to absorb smoke (2) [Any FOUR]	(4 x 2]	(8)
5.1.1	Dew (1)		
5.1.2	Frost (1)		
5.1.3	Hail (1)		
5.1.4	Snow (1)		
5.1.5	Rain (1)		
5.1.6	sleet		
5.1.7	Cumulonimbus (1)	(7 x 1)	(7)
5.2.1	A – warm (1) B - cold (1)	(2 x 1)	(2)
5.2.2	Cumulonimbus cloud (1)	(1 x 1)	(1)
5.2.3	Lightning (1)	(1 x 1)	(1)
5.2.4	Strong convection current results in friction (2) Friction between the updrafts and down drafts results in electrical currents (2)	(2 x 2)	(4)
5.2.5	Positive: Filling up dams (2) Infiltration filling up ground water (2) Farmers don't have to water their cultivated land (2) Negative: Hail will damage property (2)		

Hail ill damage vegetation (2)
Flooding will result in damage (2)
Erosion of fertile topsoil (2)
[Any TWO positive and negative} (4 x 2) (8)

5.3.1 (a) Orographic/relief (1) (1 x 1) (1)

(b) The mountains (1) (1 x 1) (1)

(c) Windward side (1) (1 x 1) (1)

5.3.2 Air rises along slope (2)
Rising air cools down and condenses (2)
No condensation on leeward side where air sinks and heats up (2)
[Any TWO] (2 x 2) (4)

5.3.3 Very low rainfall/dry conditions (2)
Warm conditions (2)
Heat can be uncomfortable and results in fatigueless (2)
May experience disasters like droughts (2)
Warm, dry wind dries out plants and farmlands (2)
Contributes to development of veld fires (2)
Can cause snow to melt and avalanches to develop (2)
[Any TWO] (2 x 2) (4)

5.3.4 When air reaches the Cascade Range it has already lost moisture (2)
No additional source of water on the leeward side of the Coast Range (2)
Drier air must rise much higher for condensation to occur (2)
[Any TWO] (2 x 2) (4)

5.4.1 Cumulonimbus (2) **and**
Nimbostratus (2)
(May be written in ANY order) (2 x 2) (4)

5.4.2 The air **R**ises (2) then air **C**ools (2) then it **C**ondenses (2) (to form clouds) RCC or
Evaporation - then cooling of air - then condensation (then clouds) (2 x 2) (4)

5.4.3	Frontal or Cyclonic (rain) (2)	(1 x 2)	(2)
5.4.4	Convection or convectional (rain) (2)	(1 x 2)	(2)
5.4.5	Cumulonimbus / cumulus / strata-cumulus / [Any TWO]	(2 x 1)	(2)
5.5.1	Orographic (1)		
5.5.2	Lee (1)		
5.5.3	Conduction (1)		
5.5.4	Dew point (1)		
5.5.5	Windward (1)		
5.5.6	Cumulonimbus (1)		
5.5.7	See-breeze (1)		
5.5.8	Meteorologist (1)	(8 x 1)	(8)
5.6.1	Evaporation (1)		
5.6.2	Freeze (1)		
5.6.3	Condensation (1)		
5.6.4	Melts (1)		
5.6.5	crystallization		
5.6.6	sublimation	(6 x 1)	(6)

6. SYNOPTIC WEATHER MAPS

6.1.1
a) 29°C (1)
b) 11°C (1)
c) ½ (1)
d) None (1)
e) NNW (1)

f) 1022 (1)

g) 10 knots (1)

(7 x 1) (7)

6.1.2 Isobars (1)

6.1.3 Winter (1)

6.1.4 South Indian (1)

6.1.5 D (1)

6.1.6 1020 (1)

6.1.7 Coastal low (1)

6.1.8 Decrease (1)

6.1.9 Anti-cyclone (1)

(8 x 1) (8)

6.2.1 A (1)

6.2.2 C (1)

6.2.3 A (1)

6.2.4 C (1)

6.2.5 D (1)

6.2.6 A (1)

6.2.7 B (1)

6.2.8 C (1)

(8 x 1) (8)

GRADE 10

MARKING GUIDELINE

GEOMORPHOLOGY

INTERNAL STRUCTURE OF THE EARTH

1.1.1	Mantle (1)		
1.1.2	Outer Core (1)		
1.1.3	Crust (1)		
1.1.4	Mantle (1)		
1.1.5	4/inner core (1)		
1.1.6	1/crust (1)		
1.1.7	Moho (1)	(7 x 1)	(7)
1.2.1	A – Crust (1) B – Mantle (1) D - Inner Core (1)	(3 x 1)	(3)
1.2.2	Inner core (1) Crust (1)	(2 x 1)	(2)
1.2.3	Inner core (1) Its +- 6000ºC (1)	(2 x 1)	(2)
1.2.4	**Crust:** It is in a solid form (2) It has a moderate temperature (2) It consists of fertile soil (2) that sustain growth of vegetation that is important for live on earth (2)	(4 x 2)	(8)
1.3.1	Inner (1) and outer core (1)	(2 x 1)	(2)
1.3.2	The outer core (1) It has convection currents that create the Earth's magnetic field (2)	(1 +2)	(3)
1.3.3	Temperature increases from the crust towards the core.		

	Density increases from the crust towards the core. [LEARNER MUST MENTION BOTH TEMPERATURE AND DENSITY]	(2 x 2)	(4)
1.3.4	The higher density crystal structures can be found at a shallower level in the earth as compared to mars (2) The higher density crystal structures can be found at a deeper level in mars as compared to earth (2) (CONCEPT)	(1 x 2)	(2)
1.3.5	The mantle would be molten in nature and allow the crust to move (2) The mantle could display convectional currents and cause the crust to have- divergent and convergent movement. (2) The moving crust of mars could lead to earthquakes and volcanoes (2) [ANY TWO PREDICTIONS]	(2 x 2)	(4)
1.4.1	A – solid (1) B – Liquid state (1) C – Pliable (1) D – Solid (1)	(4 x 1)	(4)
1.4.2	SIAL – The continental crust that makes up the land and consists mainly of silicon and aluminum (1) SIMA- The ocean crust below the sea consisting mainly of silicon and magnesium (1) Geoid shape - The geoid is the shape that the ocean surface would take under the influence of the gravity and rotation of Earth alone. (1)	(3 x 1)	(3)
1.4.3	The temperature decreases (2) from outer core to the crust (2)	(2 x 2)	(4)
1.4.4	Higher temperature results in material being more liquid (2) Colder temperature results in material being solid (2)	(2 x 2)	(4)

CLASSIFICATION OF ROCKS

2.1.1 F (1)

2.1.2 L (1)

2.1.3 D (1)

2.1.4	B (1)		
2.1.5	M (1)		
2.1.6	A (1)		
2.1.7	C (1)	(7 x 1)	(7)
2.2.1	Igneous rocks (1)		
2.2.2	Metamorphic rocks (1)		
2.2.3	Igneous rocks (1)		
2.2.4	Sedimentary rocks (1)		
2.2.5	Metamorphic rocks (1)		
2.2.6	Igneous rocks (1)		
2.2.7	Sedimentary rocks (1)		
2.2.8	Metamorphic rocks (1)	(8 x 1)	(8)
2.3.1	Monolith is a large massive rock or stone that often towers above the surrounding land (2)	(1 x 2)	(2)
2.3.2	Igneous (1) and Sedimentary (1)	(2 x 1)	(2)
2.3.3	a) Paarl Rock (1) b) Uluru (1)	(2 x 1)	(2)
2.3.4	Movement of magma underground into spaces that exist within rock strata (2)	(1 x 2)	(2)
2.3.5	**Sedimentary Rocks** are made of pre-existing rocks and sediments, (2) it can contain organic material and is deposited in horizontal layers. (2) **Igneous rocks** formed from molten minerals that cools down below or on top of the earth (2) and contain small crystals (2).		

	Metamorphic rocks formed when sedimentary and Igneous rocks are subjected to high temperatures and or pressure (2) and physical and chemical changes takes place (2) [Any FOUR, must refer to all three types of rocks]	(4 x 2)	(8)
2.4.1	Sedimentary (1) Igneous (1) Metamorphic (1)	(3 x 1)	(3)
2.4.2	Sedimentary is layered (1) Igneous has crystals (1)	(2 x 1)	(2)
2.4.3	When subjected to high pressure (2) and temperatures (2)	(2 x 2)	(4)
2.4.4	When metamorphic rocks are subjected to weathering and erosion (2) they break down and will be transported and deposited in layers again. (2)	(2 x 2)	(4)
2.4.5	Flooring, Roof tiles or marble statues (2)	(1 x 2)	(2)
2.5.1	Igneous (1)	(1 x 1)	(1)
2.5.2	Deep under the surface (1)	(1 x 1)	(1)
2.5.3	Intrusive – Rocks forms from magma below the surface of the earth (1) Extrusive – Rocks forming from lava on the surface of the earth (1)	(2 x 1)	(2)
2.5.4	Fine to coarse crystalline rock (2) Contains valuable minerals (2) Colorful rocks (2) (Any TWO)	(2 x 2)	(4)
2.5.5	Develops from molten minerals (2) which wells up from the mantle (2) and forms crystals as it cools down (2) [Any TWO]	(2 x 2)	(4)
2.5.6	Used in the building industry to cover the walls and to make kitchen tops (2)		

	Granite is used for tombstones (2) The source of precious metals (2) (Any TWO)	(2 x 2)	(4)
2.6.1	Sedimentary (1)	(1 x 1)	(1)
2.6.2	Layered appearance (2) Evidence of an animal fossil (2) (AnyONE)	(1 x 2)	(2)
2.6.3	Remains of plant or animal preserved in the Earth's crust (1)	(1 x 1)	(1)
2.6.4	Weathered and eroded sediments are deposited by wind, water, and ice (2) Material deposited in horizontal layers (2) Sediments are compressed and cemented over time (2)	(3 x 2)	(6)
2.6.5	Crude oil forms from animal remains (2) Coal forms from dead plant material (2)	(2 x 2)	(4)

PLATE TECTONICS

3.1.1	Alfred Wegener (1)	(1 x 1)	(1)
3.1.2	Panthalassa (1)	(1 x 1)	(1)
3.1.3	Pangea (1)	(1 x 1)	(1)
3.1.4	North – Laurasia (1) South – Gondwana (1)	(2 x 1)	(2)
3.1.5	Africa, Australia, South America, Antarctica, India (Any TWO)	(2 x 1)	(2)
3.1.6	India (1)	(1 x 1)	(1)
3.2.1	Pangea (1)	(1 x 1)	(1)
3.2.2	Crustal plates that moves on the molten Mantle (1)	(1 x 1)	(1)
3.2.3	Nazca and Pacific (2)	(2 x 1)	(2)

3.2.4 Diverging (1) (1 x 1) (1)

3.2.5 Parts of the Earth's crust move on the molten Mantle because of huge convection currents. (2) (1 x 2) (2)

3.2.6 The coastline of the continents surrounding the Atlantic Ocean could fit together like a jigsaw puzzle (2)
Living animals in widely separated lands are similar (2)
Fossil plants on different continents are the same (2)
Fossil animals on different continents are the same (2)
There are numerous geological similarities (similar rocks) between eastern South America and western Africa (2)
There are ridges in the floors of the main oceans halfway between continents (2)
The sea floor spread away from these ridges; distinct patterns of stripes can be seen in the magnetism of rocks on either side of the ridges (2)
[Any FOUR] (4 x 2) (8)

3.3.1 F (1)

3.3.2 A (1)

3.3.3 D (1)

3.3.4 E (1)

3.3.5 B (1)

3.3.6 C (1)

3.3.7 G (1)

3.3.8 H (1) (8 x 1) (8)

3.4.1 Splitting up of the original single continent into smaller continents and movement of these smaller continents (1)
[Concept] (1 x 1) (1)

3.4.2 He was the first person to suggest that the continents used to be one (1)
(1 x 1) (1)

3.4.3 The remains of dead animal/plant matter that were compressed and preserved between different sedimentary layers (1)
[Concept] (1 x 2) (2)

3.4.4 No access to modern scientific techniques (2)
No satellite images to provide birds view picture of Earth (2)
Very little information regarding activities on the ocean floor (2)
Little support from fellow scientists (2)
[Any TWO] (3 x 2) (6)

3.4.5 The coastline of the continents surrounding the Atlantic Ocean could fit together like
a jigsaw puzzle (2)
Living animals in widely separated lands are similar (2)
Fossil plants on different continents are the same (2)
Fossil animals on different continents are the same (2)
There are numerous geological similarities (similar rocks) between eastern South
America and western Africa (2)
There are ridges in the floors of the main oceans halfway between continents (2)
The sea floor spread away from these ridges; distinct patterns of stripes can be seen in the magnetism of rocks on either side of the ridges (2)
[Any TWO] (2 x 2) (4)

3.5.1 Constructive (1) (1 x 1) (1)

3.5.2 It is a divergent plate boundary where the plates move away from each other (2) (1 x 2) (2)

3.5.3 Because to continental plates forms the boundary of the west coast of many continents (2) (1 x 2) (2)

3.5.4 Pacific Plate and the North American Plate (2) (1 x 2) (2)

3.5.5 It was formed by a transform boundary (2)
The two plates slid past one another instead of crashing into each other, a boundary called a strike-slip (2)
The Pacific Plate, to the west of the fault, is moving in a northwest direction (2)while the North American Plate to the east is moving toward the southwest (2) (4 x 2) (8)

FOLDING AND FAULTING

4.1.1	F		
4.1.2	E		
4.1.3	D		
4.1.4	Compressional		
4.1.5	Anticline		
4.1.6	G		
4.1.7	H	(7 x 1)	(7)
4.2.1	Normal	(1 x 1)	(1)
4.2.2	Fault plane	(1 x 1)	(1)
4.2.3	Horst / Block Mountain	(1 x 1)	(1)
4.2.4	The Earth's crust that moves up (2) relative to the surrounding landscape because of tectonic forces (2)	(2 x 2)	(4)
4.2.5	Graben / Rift Valley	(1 x 1)	(1)
4.2.6	Production of geometric electricity from underground Tourist attraction Lakes can be used for fish breeding [Any ONE]	(1 x 2)	(2)
4.2.7	The Earth's crust that moves down (2) relative to the surrounding landscape because of tectonic forces (2)	(2 x 2)	(4)
4.3.1	Transform or tear fault (1)	(1 x 1)	(1)
4.3.2	A transform fault or transform boundary is a fault along a plate boundary where the motion is predominantly horizontal.	(1 x 2)	(2)
4.3.3	Pacific plate (1) and North American plate (1)	(2 x 1)	(2)

4.3.4	San Andreas	(1 x 2)	(2)
4.3.5	Because it's a big fault that is close to some big cities. (2) It can cause an earthquake, that could cause major damage to the **San** Francisco Bay Area (2) and kill or injure thousands. (2)	(2 x 2)	(4)
4.3.6	Buildings in fault/earthquake-prone areas should be designed and constructed to resist earthquake shaking. (2) Programs to strengthen or tear down older buildings most likely to collapse during earthquakes should be implemented. (2) Selective use of land to minimize the effects of hazardous ground. (2) High- occupancy or critical structures, for example, should not be placed astride the San Andreas fault or on landslide-prone areas. (2) The accurate prediction of earthquakes will permit timely evacuation of the most hazardous buildings. (2) [Any TWO]	(2 x 2)	(4)
4.4.1	D		
4.4.2	F		
4.4.3	G		
4.4.4	E		
4.4.5	A		
4.4.6	C		
4.4.7	B	(7 x 1)	(7)
4.5.1	European (1) and Indo-Australian (1)	(2 x 1)	(2)
4.5.2	A- Convergence (1) B – divergence (1)	(2 x 1)	(2)
4.5.3	A – constructive (1) B – destructive (1)	(2 x 1)	(2)

4.5.4	A – New material (1) B -	(2 x 1)	(2)
4.5.5	Folding – when rock layers are soft/elastic and bend under pressure (1) Faulting – when rock layers are not elastic and break under pressure (1) [Any ONE]	(1 x 1)	(1)
4.5.6	A (1)	(1 x 1)	(1)
4.5.7	A **fault** is **formed** in the Earth's crust as a brittle response to stress (2)	(1 x 2)	(2)

EARTHQUAKE

5.1.1	Focus (1)	(1 x 1)	(1)
5.1.2	Destruction of homes (1) Destruction of infrastructure (1) Damage to property (1) Death amongst people (1) **[Any TWO]**	(2 x 1)	(2)
5.1.3	Epicenter was on land (2)	(1 x 2)	(2)
5.1.4	Difficult for emergency services to reach remote areas due to damaged infrastructure (2) Lack of clean water as water pipelines are damaged/destroyed (2) Leakage of sewage as sewage lines are damaged/destroyed (2) Exposure to elements because of homes being destroyed (2) Lack of medication for the ill (2) Search and rescue take long due to the damaged buildings/infrastructure (2) [Any ONE]	(1 x 2)	(2)
5.1.5	Designing buildings so they're flexible enough to absorb vibrations without falling or deteriorating (2) Strengthening support material (2) Protect and prepare possible sites of earthquakes from severe damage through the following processes: earthquake engineering (2) household seismic safety and seismic retrofit (including special fasteners, materials and techniques) (2)		

	seismic retrofitting - modification of existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes (2) Construct earthquake-resistant buildings: Interior support walls called shear walls, made of reinforced concrete, strengthen the structure, and help resist rocking forces. Cross-bracing reinforces walls with diagonal steel beams. Base isolators act as shock absorbers and allows a building to sway (2) Public awareness campaigns about the impact of earthquakes (2) Information how to prepare your home for the possible occurrence of earthquakes (2) Regular earthquake and evacuation drills (2) Continuous research on earthquake predictions (2) [Any FOUR]	(4 x 2)	(8)
5.2.1	**Earthquake:** a term used to describe both a sudden slip on a fault, and the resulting ground shaking and radiated seismic energy caused by the slip, or by volcanic or magmatic activity, or other sudden stress changes in the earth. (1) Tsunami: a sea wave of local or distant origin that results from large-scale seafloor displacements associated with large earthquakes, major submarine slides, or exploding volcanic islands. (1)	(2 x 1)	(2)
5.2.2	Honolulu (1)	(1 x 1)	(1)
5.2.3	5-6 hours (1)	(1 x 1)	(1)
5.2.4	San Francisco has well--developed transport routes for evacuation. Evacuation will be faster as many people have their own transport and public transport is efficient. The infrastructure will probably withstand the impact of the tsunami better as the type and quality of the infrastructure is better. Hospitals and emergency services are more prepared and equipped for disaster management. The economy of the country would recover more readily as it is a First-- World country. Any answer that shows an understanding of the differences between First World and Third--World countries is acceptable. (Any TWO)	(2 x 2)	(4)
5.2.5	IMPACT:		

Flooding of the coastline (2)
Damage to the vegetation (2)
Death of animals and people (2)
Injuries to people (2)
Destruction of infrastructure (2)
Damage to buildings and private property (2)
Contaminate food and water (2)
Waterborne diseases develop (2)
Salinization of rivers, lakes, and groundwater (2)
Flooding cause sewerage contamination of freshwater resources (2)
Pollute wetlands, coastal areas, agricultural fields, and forests (2)
Deposition of sediments lead to changes in habitats and species (2)
STRATEGIES:
Develop early warning systems e.g. electronic media (2)
Upgrade the infrastructure e.g. buildings, sea walls (2)
Improved communication systems must be in place (2)
Disaster management programs must be in place (2)
Coordinated rescue teams (2)
Unified plan of action for local services e.g. army, medical personnel, police (2)
Education of the population (2)
[Any FOUR, must refer to impact and strategies]

(4 x 2) (8)

5.3.1 Focus is the point within the earth where an earthquake rupture starts. (1)
The epicenter is the point directly above it at the surface of the Earth. (1)

(2 x 1) (2)

5.3.2 Normal fault (2)

(1 x 2) (2)

5.3.3 a) Richter scale (1)

(1 x 1) (1)

b) a mathematical device to compare the size of earthquakes (2)

(1 x 2) (2)

5.3.4 An elastic wave generated by an impulse such as an earthquake or an explosion. Seismic waves may travel either along or near the earth's surface or through the earth's interior 2)

(1 x 2) (2)

5.3.5		Aftershocks are earthquakes that follow the largest shock of an earthquake sequence. They are smaller than the main shock and within 1-2 rupture lengths distance from the main shock (2) Buildings are already damaged (2) People are already vulnerable (2) Infrastructure e.g. gas leaks, can results in development of fires (2) communication is difficult because of damages (2) [Any THREE]	(3 x 2)	(6)
5.4	A	Seismic waves (1)		
	B	Epicenter (1)		
	C	Focus (1)		
	D	Fault plane (1)		
	E	Crust (1)	(5 x 1)	(5)
5.5.1	a)	The point on the earth's surface directly above the focus of an earthquake (1)	(1 x 1)	(1)
	b)	An instrument used to allocate a magnitude number to qualify the energy released by an earthquake (1)	(1 x 1)	(1)
	c)	The result of a sudden release of energy in the Earth's crust (1)	(1 x 1)	(1)
5.5.2		Delhi (1)	(1 x 1)	(1)
5.5.3		India (1)	(1 x 1)	(1)
5.5.4		Near Sonia Vihar in north-east Delhi (1)	(1 x 1)	(1)
5.5.5		Earthquake was not large enough to damage the infrastructure or cause buildings to collapse (2)	(1 x 2)	(2)
5.5.6		Tremors can increase the damage that was created by the initial earthquake (2)	(1 x 2)	(2)
5.5.7		An earthquake cannot be predicted (2)		

Difficult to predict because it happens when energy is released between two continental plates under the earth (2) (2 x 2) (4)

5.6.1 C (1)

5.6.2 G (1)

5.6.3 F (1)

5.6.4 A (1)

5.6.5 B (1)

5.6.6 D (1)

5.6.7 E (1) (7 X 1) (7)

VOLCANOES

6.1.1 Intrusive: When magma from the mantle does not reach the Earth's surface and solidifies (1)
Extrusive igneous rock form from magma on the earth's surface (1) (2 x 1) (2)

6.1.2 A – laccolith (1)
B – lopolith (1) (2 x 1) (2)

6.1.3 diamonds, gold, copper, zinc (1) [Any ONE] (1 x 1) (1)

6.1.4 Composite volcano (1)
A composite volcano is made up of alternate layers of lava and ash, Tall steep sided (2) (1 + 2) (3)

6.1.5 **Paragraph: Effects of volcanoes:**

Positive
Rock weathers to form fertile soil (2)
Tourist attraction which generates an income (2)
Possibility of generating geothermal energy (2)
Negative
Injury or death (2)
Loss of property and business (2)
Burns farmland and vegetation (2) (4 x 2) (8)

6.2.1	G		
6.2.2	H		
6.2.3	I		
6.2.4	E		
6.2.5	J		
6.2.6	A		
6.2.7	B		
6.2.8	D	(8 x 1)	(8)
6.3.1	Pacific Ring of Fire= the plate boundaries around the Pacific Ocean	(1 x 2)	(2)
6.3.2	The fumes are toxic because they contain high levels of carbon dioxide and Sulphur dioxide	(1 x 2)	(2)
6.3.3	<u>Positive effects:</u> The ash will mix with topsoil to form nutrient rich soil (2) This soil makes farming activities very productive generating an income (2) The volcano is used as a tourist attraction by locals to generate an income (2) Thermal energy can be produced in the vicinity (2) [<u>Any **TWO]**</u>	(2 x 2)	(4)
6.3.4	<u>Paragraph explaining negative effects of volcanoes:</u> Loss of life (2) Damage to surrounding settlements (2) Respiratory problems caused by ash and fumes (2) Mudslides can result from movement of earth (2) Loss of income from tourists (2) Loss of income from farming (2) [<u>Any **FOUR]**</u>	(2 x 4)	(8)

6.4.1	An active volcano is one that erupts regularly A volcano that is erupting at regular intervals (CONCEPT)	(1 x 1)	(1)
6.4.2	Cinder Cone The volcano is ejecting large amounts of volcanic ash The volcano has distinct layers of ash and lava There is an absence of subsidiary cones which is associated with composite volcanoes (ANY ONE REASON)	(1 + 2)	(3)
6.4.3	1- ash cloud/ volcanic cloud/ volcanic plume 4- layers of volcanic ash and lava	(2 x 1)	(2)
6.4.4	A caldera is formed when the top of the cone collapses to form a large depression	(1 x 2)	(2)
6.4.5	Paragraph format- Socio-economic effects of volcanoes (Positive and negative) Positive Rock weathers to form fertile soil leading to agricultural growth Promotes tourist attraction which is an economic boost and Tourism supports new job opportunities Possibility of generating geothermal energy Volcanic rocks can be mined, creating jobs Negative Injury or possibility of death Loss of property and business Burns farmland and vegetation (ACCEPT OTHER LOGICAL ANSWERS)	(4 x 2)	(8)
6.5.1	A volcanologist, or volcano scientist, is a geologist who focuses on understanding the formation and eruptive activity of volcanoes. (1)	(1 X 1)	(1)
6.5.2	Hiking excursion to Mount Edna (1)	(1 x 1)	(1)
6.5.3	This is good for increasing renewable energy use. (2) Ash ejected by the volcano acts as a good fertilizer for soils. (2) Volcanoes attract many tourists, who enjoy the dramatic scenery that they produce (2) Rising magma brings valuable minerals to the surface, creating mining opportunities. (2)		

	[Any TWO]	(2 X 2)	(4)
6.5.4	magma for molten rock that is underground (1) lava for molten rock that breaks through the Earth's surface (1)	(2 X 1)	(2)
6.5.5	The deterioration of water quality (2) Crop damages, and the destruction of vegetation. (2) Increased respiratory system morbidity (2) Mortality among those affected by **volcanic** eruptions (2) Fires cause damage to infrastructure, vegetation, animals, and humans (2) [Any TWO]	(2 x 2)	(4)
6.5.6	Lovely town of Taormina (2) Norman castle built on top of a hydro magma volcano (2) Gola Alcantara, a river canyon with spectacular, columnar lava formations (2)	(3 x 2)	(6)

POPULATION GEOGRAPHY

ACTIVITY 1

1.1.1 Population density (1)

1.1.2 Literacy rate (1)

1.1.3 Brain Drain (1)

1.1.4 Population distribution (1)

1.1.5 Infant mortality (1)

1.1.6 Life expectancy (1)

1.1.7 Census (1)

1.1.8 Birth rate (1) (8 x 1) (8)

ACTIVITY 2

1.2.1 DEVELOPED COUNTRY: Economically more developed country like USA, UK, Canada, Japan, Australia / Rich countries

DEVELOPING COUNTRY: Economically less developed country like any African country, countries in Asia and South America / Poor countries (2x1) (2)

1.2.2 USA (1x1) (1)

1.2.3 250 - 350 million (1x1) (1)

1.2.4 China and India (2x1) (2)

1.2.5 The climate of the area is well suited for human life.
There is enough rainfall/water in these countries.
These countries have enough space for all the people.
The relief is flat and well suited for people to live on.
There is enough fertile soil to provide food for the people. (2x2) (4)
(Any TWO)

ACTIVITY 3

1.3.1 China: 1, 34 billion
India: 1,16 billion
USA: 307 million
Indonesia: 240 million
Brazil: 199 million
Pakistan: 175 million
Bangladesh: 156 million
Nigeria: 149million
Russia: 140 million
Japan: 127 million
(10x1) (10)

1.3.2 Asia (1x1) (1)

1.3.3 523 million (1x1) (1)

1.3.4 Bangladesh (1x1) (1)

1.3.5 No, because there are population changes, same countries population could increase and other decrease. (2x1) (2)

ACTIVITY 4

1.4.1 Urbanisation: the increase in the proportion of people living in towns and cities. (1x1) (1)

1.4.2 Northern Cape. (1x1) (1)

1.4.3 Gauteng. (1x1) (1)

1.4.4 Large economy (1x1) (1)
Possible prospects of employment (1x1) (1)
Highly industrialised
Gold mines

(Accept any relevant reason)

1.4.5 56.47 Million (1x2) (2)

1.4.6 Mechanisation causes unemployment✓✓
Low wages paid to farm worker✓✓
Droughts lead to possible economic failure✓✓
Rising farming cost coupled with low prices✓✓
Consolidation of small farms
Poverty (4x2) (8)

ACTIVITY 5

1.5.1 Population explosion: a very rapid increase in the world's population. (1x1) (1)
1.5.2 4 billion (1x1) (1)
1.5.3 1 billion (1x1) (1)
1.5.4 2046 (1x1) (1)
1.5.5 11 billion (1x1) (1)

ACTIVITY 6

2.1.1 B (1X1) (1)
2.1.2 D (1X1) (1)
2.1.3 F (1X1) (1)
2.1.4 E (1X1) (1)
2.1.5 A (1X1) (1)
2.1.6 G (1X1) (1)
2.1.7 C (1X1) (1)
[7]

ACTIVITY 7

2.2.1 Triangular/Progressive (1x2) (2)
2.2.2 15 – 24 (1x2) (2)
2.2.3 Females (1x2) (2)
2.2.4 Women Are More Educated – Want to Pursue Careers
Access to Contraception
Access to Family Planning (accept other) (2x2) (4)
2.2.5 Dependency Ratio: How Many Children and Aged People the Working Class Must Support (1x2) (2)
2.2.6 High (1x2) (2)

ACTIVITY 8

2.3.1 (a) = Developed
(b) = Developing (2x1) (2)

2.3.2 a. 0 – 14
b. 65 +
c. 16 – 64 + (3x1) (3)

2.3.1 Figure 2.3 (b) (1x1) (1)

2.3.4 Developed Country
Birth Rate: is generally low because of good medical aid, use of contraceptives, education.
Death Rate: low due to well established medical facilities.
Dependency: low due to less children being born.
Education Levels: is usually high due to well-developed education systems / higher economic status. (4x2) (8)
[14]

ACTIVITY 9

2.4.1(a) Approximately 1,4 million (1x1) (1)
(b) Approximately 0,6 million (1x1) (1)
(c) Approximately 5 million (1x1) (1)

2.4.2 0 – 4 years (1x1) (1)

2.4.3 Developing country (1x1) (1)

2.4.4 A developing country's population pyramid usually has a classic triangular shape like this one in FIGURE 2.4.
Population pyramid shows high birth rate and high death rate that is common in developing countries
Life expectancy is low (Any one) (1x2) (2)

2.4.5 Resources are over exploited.
Congestion
Farmland are shrinking.
Unemployment rate increases.
Forests are shrinking.
Municipality services will break down.
Waste disposal becomes a crisis.
Unhealthy competitions/conflict/wars (Any four) (4x2) (8)

ACTIVITY 10

2.5.1 Life expectancy is the average number of years a person is expected to live. (Concept) (1x1) (1)

2.5.2 Lowest life expectancy = Free State
Highest life expectancy = Western Cape (2x1) (2)

2.5.3 All nine provinces had a higher life expectancy from 2016–2021 than 2011–2016 (1x2) (2)

2.5.4 Access to healthcare

Poverty
Access to food
Diseases
Malnutrition
War
Natural disasters
Accidents
Lack of education
Crime rate
Drug abuse (Any two) (2x2) (4)

2.5.5 Regular check-up
Do not abuse drugs.
Live a responsible life such as not over-speeding, not abusing alcohol, not having multiple relationships.
Do not do crime.
Eat a balanced diet.
Improve their literacy rate (Any 3) (3x2) (6)
[15]

ACTIVITY 11

2.6.1 2, 3 million (1x2) (2)
2.6.2 2, 3 million (1x2) (2)
2.6.3 15 to 19 year (1x2) (2)
2.6.4 3, 5 million (1x2) (2)
2.6.5 12, 8 million (1x2) (2)
2.6.6 Classic triangle shape (1x2) (2)

ACTIVITY 12

3.1.1 A (1)

3.1.2 B (1)

3.1.3 A (1)

3.1.4B (1)

3.1.5 A (1)

3.1.6 B (1)

3.1.7 B (1) [7]

ACTIVITY 13

3.2.1 44.8 million (1 x 1 = 1)

3.2.2 Gauteng with 13.4 million people (2 x 1 = 2)

3.2.3 Higher birth rate.
low infant death rate.
because of higher quality medical service rendered therefore the population increased.
(Any TWO. Accept any other possible answers) (2 x 2 = 4)

3.2.4 A rapid increase in population would put a strain on water availability.
Housing will also be a problem because all these people need homes.
Education will suffer because of availability of schools and educators.
The economy will suffer because the dependency levels will increase and there will be less economic active people to
support the dependants.
(Any THREE. Accept other possible answers) (3 x 2 = 6)

3.2.5 South African government can limit the birth rate by enforcing restrictions on the quantity of children per household.
Higher quality education.
the availability of birth control can also assist.
(Any ONE) (1 x 1 = 1)

ACTIVITY 14

3.3.1 Developing (2) (1 x 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)

ACTIVITY 15

3.4.1 Population is the total number of people within a given area. (1 x 1) (1)
3.4.2 2002 = 44,8 million
2016 = 54,9 million (2 x 1) (2)
3.4.3 Lowest – Western Cape (6,3 million)
Highest – Gauteng (13,4 million) (2 x 1) (2)
3.4.4 From 2002 to 2016 the population of South Africa increased (1 x 2) (2)
3.4.5 □ Demand for water increases with a growing population.
□ As population increases, so available cropland decreases.
□ Original forests have disappeared.
□ Shortage of food (Any 2 x 2) (4)
3.4.6 □ Practise birth control
□ Availability of contraception
□ Sterilisation
□ Family planning
□ People can be educated about the problems of population growth.

 Encourage abortion (Any 2 x 2) (4)

ACTIVITY 16

3.5.1 From 1750 to around 1950, total world population grew relatively slowly from one billion people to approximately 2.2 billion. It took 200 years for world population to double. (2x1) (2)

3.5.2 From 1950 to today, world population grew at rapid (exponential) rate.
It increased from just over two billion people, to over six billion.
Total world population is doubling in a much shorter time.
Some geographers call this the 'population explosion'. (2x1) (2)

3.5.3 Population growth in less developed countries has been more rapid and there are many more people in less developed countries of the world
In more developed countries, the population growth has been slower and there are relatively-speaking, fewer people in such countries.
(2x2 (4)

3.5.4 7 to 8 billion people (Take any one) (1x2) (2)

ACTIVITY 17

3.6.1 Yes (1X1) (1)

3.6.2 Ms Population explosion has more children than the average women.
(Accept other reasonable answers). (1 x 2) (2)

3.6.3. Not enough money to provide for the family, food, housing, education and medical aid.
Discipline problems because they are too many to care for.
They can become sick and die and there is no medical aid.
The mom could die and leave the family alone.
(Accept other reasonable answers) (8 x 1) (8)

ACTIVITY 18

4.1.1 A (Political migrant)

4.1.2 B (Remittance payment)
4.1.3 B (Tourist)
4.1.4 D (Illegal migrant)
4.1.5 C (Contraception)
4.1.6 D (Population pyramid)
4.1.7 B (Over population) (7 x 1) (7)

ACTIVITY 19

4.2.1 Rural-urban migration (2) (1 x 2) (2)

4.2.2 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) (2)

4.2.3. 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)

4.2.4 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)

ACTIVITY 20

4.3.1 (a) People that are forced to leave their country (2) [Concept] (1 x 2) (2)
(b) Intense dislike of people of another country/fear of hatred of foreigners (2)[Concept] (1 x 2) (2)

4.3.2 Nigeria/Tanzania/Mozambique/Swaziland/Lesotho/Namibia/ Botswana/Congo/Somalia/Rwanda/Angola/Burundi (2)
[Any ONE] (1 x 2) (2)

4.3.3 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)

4.3.4 Take the jobs of locals (2)
Associated with crime/drugs (2)
Offer cheaper labour (2)
[Any TWO. Accept other] (2 x 2) (4)

4.3.5 Fill a skills gap (2)
Source of cheap labour supply (2)
[Any ONE] (1 x 2) (2)

ACTIVITY 21

4.4.1 Rural area (1 x 1) (1)
4.4.2 Rural-urban migration (1 x 1) (1)
4.4.3 Rural depopulation (1 x 1) (1)
4.4.4 • Youth move to urban areas for better standard of living.
• They are active looking for jobs or education. (2 x 1) (2)
4.4.5 • Lack of jobs in rural areas
• Poor service
• Poor facilities
• Natural disasters (Any) (1 x 2) (2)
4.4.6 • Growing of informal settlement in urban areas
• Shortage of houses in urban areas
• High rate of crime

• Unemployment in urban areas
• Overcrowding (Any) (2 x 2) (4)

4.4.7 • Job creation in rural areas
• Improve service delivery
• Upgrade infrastructure such as roads (Any) (2 x 2) (4)

ACTIVITY 22

4.5.1 (a) Xenophobia is a strong and unreasonable dislike or fear of people from other countries. (Concept) (1 x 1) (1)

(b) Refugee is a migrant who is forced to migrate to another country. (Concept) (1 x 1) (1)

4.5.2 Somalia (1 x 1) (1)

4.5.3 • Brian is hoping to get a job in South Africa.
• He is looking for better standard of living.
• Better salary to support his family. (Any 2) (2 x 1) (2)

4.5.4 • Many South Africans believed that refugees are here to take their jobs.
• People associate refugees with crime and drugs. (Any 1) (1 x 2) (2)

4.5.5 • Refugees fill a skills gap. They come with the skills from their countries e.g. Doctors, teachers, engineers, etc.
• Refugees are sources of cheap labour supply.
• They contribute positively to our economy and our country. (Any 2)(2 x 2) (4)

4.5.6 • Government should provide temporary camps or build low cost housing for refugees.
• Send all refugees who are struggling back to their home countries.
• Integrate refugees into existing settlements.
• Ask other neighbouring countries to accommodate the refugees. (Any 2) (2 x 2) (4)

ACTIVITY 23

4.6.1 Political migrant forced to migrate to another country. (1X2) (2)

4.6.2 As foreigners the host country must provide them with shelter, food and job opportunities to ensure their livelihood is restored. (Accept any relevant answer) (1x2) (2)

4.6.3 Xenophobia (1X2) (2)

4.6.4 African (1X2) (2)

4.6.5 PULL FACTORS
- Employment
- Better services
- More entertainment

- Diversity of social communities

PUSH FACTORS

- Poverty
- Ill-health and diseases
- Droughts
- War and civil strife (2x4) (8)

(Accept any other relevant answer)

WATER MANAGEMENT IN SOUTH AFRICA

Activity 1

1. Vaal and Orange
2. Botswana, Namibia and Zimbabwe
3. Gariep Dam, Vanderkloof dam, Sterkfontein Dam, Vaal Dam, Pongola poort Dam
4. Gariep Dam
5. Lake Sibiya

Activity 2

Human factors

- The population is increasing
- Commercial farmers are using more water for irrigation
- Urbanisation
- Untreated waste water
- Mines and factories use a lot of water
- Pollution of water sources

Physical factors

- Rainfall is not evenly distributed in South Africa
- Alien vegetation consumes more water
- Climate change

Activity 3

1

a)

- South Africa has less rainfall of about 490 mm per year
- It is Semi- Arid area
- People of south Africa abuse usage of water
- South Africa has rapid population growth.
- South Africa is become a high industrialised country (ANY ONE)

b)

- Alien vegetation absorbs a lot water
- Indigenous vegetation can withstand dry seasons

2 Lesotho water transfer scheme.

.3 Electricity generated through water.

.4 Gauteng.

5

- Gauteng has no rain /little rain in winter only in summer
- Fewer rivers that pass through Gauteng
- Gauteng has the highest population density in South Africa
- Gauteng is high industrialised (ANY TWO)

6.

- Positive Impacts of building a dam
- Help with generating electricity
- For tourist attraction and entertainment
- Storing water to be used during drought seasons
- To stop flood irrigation
- Store and supply water to cities
- Control floods
- Provide irrigation to farms

Activity 4

1 Water transfer is moving water from one area to another

2 Nelson Mandela Metropolitan Municipality
Eastern Cape

3
- Water is used for irrigation
- Supplying urban centres in the Nelson Mandela Metropolitan area

4
- Water is piped from the Gariep Dam to the Great Fish River basin
- A weir, Elandsdrift, diverts water from the Great Fish River into a canal and through a tunnel into the Little Fish River
- A pipeline pipes water into a canal and to the Darlington Dam on the Sundays River.

5 **Human factors**
- The population is increasing
- Commercial farmers are using more water for irrigation
- Urbanisation
- Untreated waste water
- Mines and factories use a lot of water
- Pollution of water sources

Physical factors
- Rainfall is not evenly distributed in South Africa
- Alien vegetation consumes more water
- Climate change

Activity 5

4.1 Smallest: Commercial users – 93 m^3 □

Largest: Redistributors – 2 310 m^3 □

4.2 Cubic metres/m^3 □

4.3 5035 m^3 □

4.4 Households + industry = 308 m^3 □ + 119 m^3 □ = 427 m^3 □

4.5 □ Grey water is used water which is still quite clean. It includes water from baths and showers. □□

□ This water is suitable for activities such as watering plants and flushing toilets. □□

4.6 □ Building of dams to store more water

□ Desalination, coastal settlements can remove the salt from sea water □□

□ Recycling, national and local government can purify and recycle more waste water □□

□ Controlling leaks, replacing leaking pipes will reduce loss of water □□

□ Groundwater, boreholes can supplement water supplies □□

□ Rainwater harvesting, people can use tanks to collect rainwater □□

□ Using of grey water □□

□ Water charge increases □□

Activity 6

1. It is used to generate electricity

2
- Domestic use (an example of any domestic use is accepted)
- Used for agricultural activities

3
- The availability of groundwater helps to make up for high evaporation rates
  People can tap into this groundwater supply through wells and boreholes
  At present, over 2 000 m^3 of water is removed from the ground through boreholes everyday

4. **In the home:**

- Close taps when not using the water
- Fix dripping taps and leaks
- Use water-saving showerheads

- Flush toilets less often
- Take showers and fewer baths
- Re-use dirty water for cleaning e.g. washing cars or floors

In the garden

- Use a watering can instead of a hose pipe
- Collect rainwater from the roof
- Use bath water to water vegetables
- Water plants in the evening

In the community

- Report leaking pipes to the municipality
- Remove invasive alien plants
- Educate others about using water sustainably

Activity 7

1 Flood is when a large amount of water covers parts of the land that is not usually under water. (Concept) □

2 □ Extended periods of heavy rain □□
□ Steep slopes that lead to high runoff □□
□ Flat land where rivers can naturally overflow □□
□ Earth quakes can cause tsunami □□

□ Lack of vegetation cover □□

3 □ Cape flats are situated in flat land where rivers can naturally overflow. □□

□ Water table is high. □□

4 □ Floods destroy crops □□
□ Drown people and livestock □□
□ Wash away topsoil □□
□ Damage homes and other buildings □□
□ Disrupt communications such roads, railways and telephone and power lines □□

5 □ Improving drainage systems to take away street runoff □□
□ Building concrete walls to raise the height of river banks □□
□ Installing and maintaining drains □□
□ Channelling water out of a river into a storage dam □□
□ Educating people about flooding □□
□ Designing disaster plans to handle a flood situation when it happens □□

Activity 8

1 Mozambique

2 South Africa

3 SA Military Health Services

4
- Houses are built out of plastic, wood, zinc, etc.
- Very dense housing with unplanned street patterns

5
- Poor road junctions were washed away
- Low bridges were washed away which made the area unreachable (inaccessible)

6
- Providing of formal housing in other areas
- Relocating buildings within settlements
- Preventing people from building houses in areas at high risk of flooding
- Improving the design of houses
- Installing and maintaining drains
- Designing disaster plans to handle a flood situation when happens
- Educating people about flood dangers