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NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2022

GEOGRAPHY P1
MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 9 pages.

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SECTION A: CLIMATOLOGY AND GEOMORPHOLOGY

QUESTION 1

1.1	1.1.1	B (1)		
	1.1.2	C (1)		
	1.1.3	D (1)		
	1.1.4	C (1)		
	1.1.5	B (1)		
	1.1.6	A (1)		
	1.1.7	D (1)		
	1.1.8	C (1)	(8 x 1)	(8)
1.2	1.2.1	ITCZ (1)		
	1.2.2	heat (1)		
	1.2.3	north (1)		
	1.2.4	January (1)		
	1.2.5	July (1)		
	1.2.6	South Atlantic (1)		
	1.2.7	January (1)	(7 x 1)	(7)
1.3	1.3.1	The name starts with letter A/First letter of the alphabet (1)	(1 x 1)	(1)
	1.3.2	Madagascar (1) Reunion (1) Mauritius (1) **[ANY ONE]**	(1 x 1)	(1)
	1.3.3	These islands are in the direct path of the tropical cyclone that moves in an easterly direction (1)	(1 x 1)	(1)
	1.3.4	Latent heat is distributed vertically around the centre of the storm (2) This leads to a pressure drop at the surface (2) Pressure gradient between the storm and the surface strengthened (2) **[ANY TWO]**	(2 x 2)	(4)

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1.3.5 The cyclone moves towards higher sea temperatures (2)
It encounters a different wind belt (westerly wind belt) (2) (2 x 2) (4)

1.3.6 Strong winds cause storm surges that would damage harbours (2)
Damage to harbours will limit imports and exports (2)
Commercial fishing vessels would not be able to go out to sea (2)
It would discourage tourism and its related coastal activities (accept examples) (2)
There would be a loss of jobs in the tourism sector (2)
Repairs to infrastructure along the coast would be costly for insurance companies or government (2)
[ANY TWO] (2 x 2) (4)

1.4 1.4.1 Thunderstorms arranged in a line from the NW to the SE over the interior of the country during summer (2)
[CONCEPT] (1 x 2) (2)

1.4.2 Covers a greater vertical/widespread area (1)
They have a longer duration (1)
Are more destructive (1)
[ANY ONE] (1 x 1) (1)

1.4.3 Low pressure over the land (1)
Band of thunderstorms stretching from NW to the SE of the country (1)
Thunderstorms are experienced on the eastern part of the heat low/moisture front (1)
[ANY TWO] (2 x 1) (2)

1.4.4 Diverges cold, dry south westerly winds to meet warm moist air in the central part of the country (2) (1 x 2) (2)

1.4.5 It carries warm moist air towards the heat low (2)
The north easterly winds are undercut by the cold, dry air and rises along the moisture front (2) (2 x 2) (4)

1.4.6 Valuable nutrients in the soil are washed away (2)
Soil nutrients leach lower down the soil profile making soil less fertile (2)
Ecosystems/foodchains are destroyed (2)
Decrease in biodiversity (2)
Aesthetic beauty diminished (2)
Vegetation flooded (2)
Wildlife drown (2)
[ANY TWO] (2 x 2) (4)

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1.5	1.5.1	Temperature (1)	(1 x 1)	(1)
	1.5.2	Increases humidity (2)	(1 x 2)	(2)
	1.5.3	Tall buildings cause the sun's rays to be reflected and deflected between the buildings (2) Large surface areas of buildings absorb more of the sun's rays (2) Density of buildings ensures that the heat remains closer to the earth's surface (2) **[ANY TWO – answer must include shape and density]**	(2 x 2)	(4)
	1.5.4	Paint buildings in lighter colours e.g. white to increase reflection of heat (2) Planting gardens on roof tops will cool temperatures (2) Buildings should be eco-friendly (green) (2) Future land use planning (buildings) should coincide with prevailing wind directions to cool cities (2) Decentralise commercial activities to reduce building density (2) Decrease building height to reduce heat trapped by buildings (2) Decrease building density to reduce heat near surface (2) Filters in chimneys of buildings to reduce air pollution **[ANY FOUR – answer must include shape and density]**	(4 x 2)	(8)
				[60]

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QUESTION 2: GEOMORPHOLOGY

2.1	2.1.1	Z (1)		
	2.1.2	Y (1)		
	2.1.3	Y (1)		
	2.1.4	Y (1)		
	2.1.5	Z (1)		
	2.1.6	Y (1)		
	2.1.7	Z (1)		
	2.1.8	Y (1)	(8 x 1)	(8)
2.2	2.2.1	vertically (1)		
	2.2.2	knickpoint (1)		
	2.2.3	a drop in sea level (1)		
	2.2.4	after (1)		
	2.2.5	Valley-in-valleys (1)		
	2.2.6	headward (1)		
	2.2.7	ungraded (1)	(7 x 1)	(7)
2.3	2.3.1	laminar (1)	(1 x 1)	(1)
	2.3.2	The river bed is smooth which allows for a smooth flow (2) There are no rocks or obstacles to cause friction (2) **[ANY ONE]**	(1 x 2)	(2)
	2.3.3	The water flow has a low velocity (2) The river cannot transport all of its load, resulting in deposition (2)	(2 x 2)	(4)

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2.3.4 **Fluvial features**
The narrow V-shaped valley causes friction which slows the flow of water (2)
Traction load cause swirling movement of water (2)
Waterfalls increases the velocity of water and swirling movement at the plunge pool (2)
Rapids increases the velocity of water over the outcrop/layer dipping stream up (2)
Steep gradient (Slopes)
Increases velocity of water (2)
Uneven slopes cause swirling movement of water (2)
[ANY FOUR – both fluvial features and steep gradient must be mentioned] (4 x 2) (8)

2.4 2.4.1 Embankments formed after a river floods/naturally raised banks of a river (1)
[CONCEPT] (1 x 2) (2)

2.4.2 B (1) (1 x 1) (1)

2.4.3 After flood waters recede, it leaves behind gravel, sand and silt which builds up to form a raised bank (2)
Flooding causes deposition of the coarse material at the edges (2)
Continuous flooding causes built-up of sediments on the banks (2)
[ANY ONE] (1 x 2) (2)

2.4.4 They are not easily transported or washed away (2)
These sediments bring stability to the raised bank (2)
[ANY ONE] (1 x 2) (2)

2.4.5 Reduces erosion of the flood plain (2)
It is effective in flood control as it acts as a buffer that can protect the surrounding floodplain (2)
Decreases flooding so that the floodplain does not become waterlogged (2)
Preserves habitats, ecosystems and biodiversity on the floodplain due to less flooding (2)
[ANY TWO] (2 x 2) (4)

2.4.6 Makes it difficult for farmer to access water for irrigation (2)
Increases costs for farmers as they have to source water further downstream/upstream (2)
River becomes inaccessible to livestock (2)
Alluvium/silt not deposited regularly on floodplain causing soil fertility problems (2)
Production will decrease due to a shortage of fertile land (2)
Farmland will be flooded if levee breaks (2)
[ANY TWO] (2 x 2) (4)

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2.5	2.5.1	Provides Port Elizabeth with 70% of its water (1)	(1 x 1)	(1)
	2.5.2	The upper reaches of a drainage basin that supplies a river with most of its water / The area that captures rain water, which will drain into a river system (2) **[CONCEPT]**	(1 x 2)	(2)
	2.5.3	Climate change (1) Droughts (1) Erosion (1) **[ANY TWO]**	(2 x 1)	(2)
	2.5.4	River will become polluted (2) Dumping of industrial waste (2) Inhabitants will contaminate the water (2) Eutrophication will increase (2) Water quality will decrease (2) River will silt up (2) Aquatic (rivers) ecosystems are destroyed (2) Settlement development will destroy natural catchment areas (2) **[ANY ONE]**	(1 x 2)	(2)
	2.5.5	It is too expensive to construct (2) It would affect flow patterns of rivers (2) Disruption of Aquatic (river) ecosystems (2) **[ANY TWO]**	(2 x 2)	(4)
	2.5.6	Sustainable job opportunities in maintaining the drainage basins (2) Quality water supply to surrounding farmers who can increase output for manufacturing (2) Water supply to industries is consistent and productivity will be maintained or increased (2) It will attract further industrial investment (2) This will have a multiplier effect on the economy of the region (2) **[ANY TWO]**	(2 x 2)	(4)
				[60]

TOTAL SECTION A: 120

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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1	3.1.1	B (1)	(1 x 1)	(1)
	3.1.2	A (1)	(1 x 1)	(1)
	3.1.3	C (1)	(1 x 1)	(1)
	3.1.4	*Difference in years:* 2022 – 2014 = 8 years (1) *Mean annual change:* 5'(1) West *Total change:* 8 x 5 = 40' (1) West *Magnetic declination in 2022:* 18°12' +(1) 40' 18°52' West of True North (1)	(5 x 1)	(5)
	3.1.5	24° + 18°52' (1) = 42°52' (1)	(2 x 1)	(2)

3.2 MAP INTERPRETATION

3.2.1	B	(1)	(1 x 1)	(1)
3.2.2	A	(1)	(1 x 1)	(1)
3.2.3	(a)	1 (1)	(1 x 1)	(1)
	(b)	Artificial surfaces at **1** absorb more heat (2) Natural surfaces at **2** does not absorb a lot of heat (2) Artificial production of heat at the industrial area (2) Pollution dome created will increase temperatures at **1** (2) Higher buildings at **1** trap the heat (2) **[ANY TWO]**	(2 x 2)	(4)
3.2.4	(a)	J (1)	(1 x 1)	(1)
	(b)	It would be expensive to build (higher) bridges (2)	(1 x 2)	(2)
	(c)	The river in the area flows in a northerly direction (2) Headward erosion will occur in a southerly direction (2) **[ANY ONE]**	(1 x 2)	(2)

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3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.3.1 Vector (1) (1 x 1) (1)

3.3.2 Lines, points, and polygons are used to represent the features. (1) (1 x 1) (1)

3.3.3 The vineyard and orchards are surrounded by other roads for the distribution of products (2)
Linked to the national freeway for distribution of goods (2)
Linked to the railway for transportation/export of bulk products (2)
[ANY ONE] (1 x 2) (2)

3.3.4 The run-off will end up in the river through the tributary streams (2)
The slope of the banks is steep, which will cause faster deposition of loose silt in the river (2)
The pesticides and insecticides used by farmers will flow easily into the river causing eutrophication (2)
The area is not buffered, and expansion of the vineyard and orchards closer to the river is not restricted (2)
[ANY TWO] (2 x 2) (4)
[30]

TOTAL SECTION B: 30
GRAND TOTAL: 150

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