LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

SEPTEMBER 2021

MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 7 pages

SECTION A: CLIMATOLOGY AND GEOMORPHOLOGY

Question 1

1.1 1.1.1 Cold (1)

1.1 2 Cold (1)

1.1.3 Stable (1)

1.1.4 Cumulonimbus (1)

1.1.5 Heavy (1)

1.1.6 Steadily (1)

1.1.7 Mature (1) (7 x 1) (7)

1.2 1.2.1 D (1)

1.2.2 E (1)

1.2.3 B (1)

1.2.4 I (1)

1.2.5 A (1)

1.2.6 G (1)

1.2.7 F (1)

1.2.8 C (1) (8 x 1) (8)

1.3 1.3.1 7 (seven) (1) (1 x 1) (1)

1.3.2 Cyclones are named according to the letters of alphabet (2)
G is the seventh letter of alphabet (2) ANY ONE (1 x 2) (2)

1.3.3 High humidity (2)
No clouds/clear skies (2)
Calm conditions (2)
Warm conditions ANY TWO (2 x 2) (4)

1.3.4 Increased friction over the land reduce wind speeds (2)
Moisture content has decreased results in a decrease in latent heat (2)
(2 x 2) (4)

1.3.5 Strong winds will damage and remove roofs of buildings (2)
Power lines and telephone lines may be destroyed by strong winds (2)
The heavy rainfall may uproot the pipelines (2)
Network connectivity may be interrupted by lightening (2)
Hails storms will damage property (2)
Floods will damage/wash away tarred roads/ create pot holes (2)
ANY TWO (2 x 2) (4)

1.4 1.4.1 Is a dry line separating these two high pressure systems/
A zone that separates the moist air mass from the dry air mass. (2)
[CONCEPT] (1 x 2) (2)

1.4.2 Cold (1) (1 x 1) (1)

1.4.3 The cool air from the southwest lifts the warm air from the northeast (2)
The warm air cools, condenses and forms cumulonimbus clouds. (2)
It results in thunderstorms following the line of the moisture front (2)
ANY TWO (2 x 2) (4)

1.4.4 POSITIVE
Rainfall provides water for crops and animals (2)
Encourages farming activities. (2)
Farmers could start with their crop production activities (2)
Flooding increase soil fertility over the floodplains (2)
Nitrates from lightning improve soil quality (2)
Production increases and profit margins grow (2)

NEGATIVE
Heavy rains cause floods which damage infrastructure (2)
Flooding leads to erosion which removes top soil (2)
Floods destroy/ washed away crops (2)
Floods kill/drown livestock (2)
Lightning may damage farming equipment and cause fires (2)
ANY FOUR (4 x 2) (8)

1.5 1.5.1 Located in the middle of the valley (1) (1 x 1) (1)

1.5.2 Warm air is displaced from the bottom of the valley by sinking cold air and rises (2)

The warm air is trapped in the middle of the valley between two layers of cold air . (2) (2 x 2) (2)

1.5.3 The slopes are warm during cold winter nights (2)
It is a frost free zone (2)
Receives more insolation during the day (2) (2 x 2) (4)

1.5.4 Human activities (industrial activities) pollute the air in the lower part of the valley. (2)
The thermal belt traps the pollutants. (2)
The trapped pollutants decrease the quality of air in the lower parts of the valley. (2) (3 x 2) (6)

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Question 2: Geomorphology

2.1 2.1.1 A (1)

2.1.2 D (1)

2.1.3 C (1)

2.1.4 B (1)

2.1.5 C (1)

2.1.6 B (1)

2.1.7 C (1)

2.1.8 D (1) (8 x 1) (8)

2.2 2.2.1 C (1)

2.2.2 B (1)

2.2.3 B (1)

2.2.4 A (1)

2.2.5 C (1)

2.2.6 A (1)

2.2.7 C (1) (7 x 1) (7)

2.3 2.3.1 B (1) (1 x 1) (1)

2.3.2 The profile is smooth and concave (2)
There are no obstructions or temporary base levels (2)
ANY ONE (1 x 2) (2)

2.3.3 The slope is steep (2)
The river bed is uneven (2) (1 x 2) (2)

2.3.4 River flows over alternating layers of hard rock and soft rock (2)
Soft rock below the resistant cap is eroded (2)
Flowing water plunges/falls down the cap rock to form a waterfall (2)
(2 x 2) (4)

2.3.5 Water erodes and remove temporary base levels in the stream A (2)
Eroded material is transported downstream until it is deposited in the lower course (2)
At this stage the rate of erosion is at an equilibrium with deposition (2)
The equilibrium forms smooth, concave shaped slope like in B (2)
ANY TWO (2 x 2) (4)

2.4 2.4.1 Lower course (1) (1 x 1) (1)

2.4.2 River meanders (2)
Slope is gentle (2)
River enters the sea (2) ANY ONE (1 x 2) (2)

2.4.3 It will create a steep slope increasing the velocity of the stream (resulting in more vertical erosion) (2) (1 x 2) (2)

2.4.4 Water becomes more silted due to erosion (2) (1 x 2) (2)

2.4.5 Vertical erosion forms valleys inside valleys (2)
Lateral erosion forms entrenched meanders (2)
Original flood plains are reduced in size/ new flood plains are formed (2)
Headward erosion shifts the knick-point (backwards) (2)
Waterfalls are formed (2)
Terraced slopes are formed (2) ANY FOUR (4 x 2) (8)

2.5 2.5.1 Water pollution (1) (1 x 1) (1)

2.5.2 South Africa does not have enough fresh water resources (2) (1 x 2) (2)

2.5.3 The amount of effluents flowing into the river is enormous (2) (1 x 2) (2)

2.5.4 Industrial effluents flowing into the river (2)
Mining waste deposited into the river (2)
Chemicals used in farming washed into the river (2)
Waste from domestic use as a result of rapid urbanisation (2)
ANY ONE (1 x 2) (2)

2.5.5 Water loses a lot of dissolved oxygen (2)
Aquatic animals die in great numbers (2)
Decline in productivity of aquatic animals (2)
Types of aquatic animals decrease /Extinction of some aquatic species. (2) ANYTWO (2 x 2) (4)

2.5.6 The river can be buffered (2)
Pass strict legislation against river pollution (2)
Educate local communities about the dangers of river pollution (2)
Conservation of the ecosystem around the river (2)
Heavy fines for offenders of pollution (2) ANY TWO (2 x 2) (4)

QUESTION 3: MAPWORK

MAP SKILLS AND CALCULATIONS

3.1 3.1.1 D (1)

3.1.2 D (1)

3.1.3 C (1)

3.1.4 A (1) (1 x 4) (4)

3.1.5. (a) Gradient $\frac{\text{Vertical Interval}}{\text{Horizontal Equivalent}}$

This mark allocation is incorrect. Refer to comment

$\frac{652m - 629m}{(3,8 \times 500)m}$ ✓ ✓ Range (3.7cm – 3.9cm)

$\frac{23m}{1900m}$ ✓ ✓ Range (1850 – 1950m)

$\frac{1}{82,60}$

1: 82,60✓ Range (1 : 80,43 to 1 : 84,78)

(5 x 1) (5)

(b) Gentle (1) (1 x 1) (1)

APPLICATION AND INTERPRETATION

3.2 3.2.1 (a) Lower course (1) (1 x 1) (1)

Reason: meanders are visible (2)
Braided streams exist (2)
Contours are far apart/ slope is gentle (2)
ANY ONE (1 x 2) (2)

(b) Soil fertility is good inside the flood plain (2)
Irrigation water is available (2)
Gentle slope good for farming (2) ANY ONE (1 x 2) (2)

(c) Butte (1) (1 x 1) (1)

Reason: The horizontal extend at the top is small than the vertical height (2) (1 x 2) (2)

3.2.2. (a) There are few streams per unit area (2)
The slope is gentle resulting in less erosion (2)
ANY ONE (1 x 2) (2)

(b) The availability of rivers boosts the aesthetic aspect of the area (2)
Conserved biodiversity in the flood plain of the Orange River (2)
Gentle slope allows for construction of resort buildings (2)
Water is readily available for use (2)
ANY ONE (1 x 2) (2)

3.3 GEOGRAPHICAL INFORMATION SYSTEM

3.3.1. (a) Refers to the clarity of an image. (1)
(CONCEPT) (1 x 2) (2)

(b) Features are clearly visible or identifiable. (1 x 2) (2)

3.3.2 Lines: Roads (1) / Hiking trail (1) ANY ONE
Polygon: Orchards and vineyards (1)
(2 x 1) (2)

3.3.3 It is a perennial river (1)
It has braided streams (1) (2 x 1) (2)

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TOTAL: 150