basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

EASTERN CAPE PROVINCE

NATIONAL SENIOR CERTIFICATE

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GRADE 11

GEOGRAPHY JUNE EXAMINATION

2024

MARKING GUIDELINE

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TOTAL MARKS: 150

THIS MARKING GUIDELINE CONSISTS OF 8 PAGES INCLUDING THE COVER PAGE.

QUESTION 1

1.1 Global air circulation

1.1.1 westerlies (1)
1.1.2 equatorial low pressure belt (1)
1.1.3 polar winds (1)
1.1.4 tropical easterlies (1)
1.1.5 polar high pressure belt (1)
1.1.6 subtropical high pressure belt (1)
1.1.7 equatorial low pressure belt (1) (7)

1.2 Relationship between pressure gradient and Coriolis force

1.2.1 A to B (1)
1.2.2 pressure gradient (1)
1.2.3 Coriolis (1)
1.2.4 Right (1)
1.2.5 High (1)
1.2.6 Geostrophic (1)
1.2.7 Low (1)
1.2.8 Gentle (1)

(8)

1.3 SYNOPTIC WEATHER MAP on South Africa

1.3.1 Summer (1) (1)
1.3.2 1. thermal low in the interior (2)
2. high pressure ridging away from continent (2)
3. cold front moving away from continent (2)
(Any TWO) (4)
1.3.3 a) High pressure (1) (1)
b) Isobaric intervals are increasing towards the center (2) (2)
c) (b-b steep), (c-c- gentle) (2) (2)

1.3.4 Cloud cover = 0/8 (1)
Wind direction = south west (1)
Wind speed = 10 knots (1)
Air temperature = 24 degrees Celsius (1)
Dew point temperature = 15 degrees Celsius (1) (5)

1.4 FOHN winds

1.4.1 Are winds that are warm, dry and gusty that blow from the windward side of the mountain (high pressure) to the leeward side of the mountain (low pressure) (2) (2)

1.4.2 10 degrees Celsius / 5 degrees Celsius (1)

1.4.3 Windward side = 10 degrees Celsius (1) (1)
Leeward side 19 degrees Celsius (1) (1)

1.4.4 As the air descends, it is heated by the dry adiabatic lapse rate (1 degree / 100m) (2)
The air is also compressed at the leeward side as it moves downwards (2) (4)

1.4.5 -The warm moist air that comes from the ocean rises on the windward side of the mountain at the DALR of (1 degree Celsius after every 100m rise) (2)
-It cools to a point where dew point temperature is reached, which is where condensation (cloud formation) occurs (2)
-After dew point temperature is reached, the air cools at the WALR (0,5 degrees Celsius after every 100m rise) (2)
-When the condensation and WALR occur, rain fall occurs on the windward side (2)
(Any THREE) (6)

1.5 Desertification on South Africa

1.5.1 The process which turns productive land into non-productive desert because of poor land-management (2) (2)

[Concept]

1.5.2 - Overgrazing (1)
- Constructing boreholes, windmills and water points (1)
- Farming marginal land (1)
- Poor grazing management (1)

- Incorrect irrigation practices (1)
- Population increase the amount of water usage (1)

(Any ONE) (1)

1.5.3 - Desertification reduces the ability of land to support life (2) (2)
- Affect domestic animals and agricultural crops (2) (2)
- Reduction food (2) (2)
- Poverty sets in (2) (2)

(Any TWO)

1.5.4 - The number of animals on the land must be reduced (2)
- Reseeding may be necessary in badly degraded areas (2)
- Farmers should change farming methods to suit the land and soil (2)
- Good land management in semi-arid areas (2)
- Take part in the activities of conservation groups. (2)
- Bring overgrazing and land mismanagement to the attention of authorities (2) (8)
- Set up schemes to save water in your community (2)

[Any FOUR. Accept other sustainable strategies]

QUESTION 2

2.1 Topography associated with the inclined strata

2.1.1 Cuesta dome (C) (1)
2.1.2 Scarp (D) (1)
2.1.3 Hogsback (G) (1)
2.1.4 Dip (E) (1)
2.1.5 Cuesta basin (F) (1)
2.1.6 Homoclinal ridge (H) (1)
2.1.7 Cuesta (B) 91) (7)

2.2. Mass movement

2.2.1 Mudflow (1)
2.2.2 Soil creep (1)
2.2.3 Landslide (1)
2.2.4 Soil creep (1)
2.2.5 Rock fall (1)

2.2.6 Soil creep (1)

2.2.7 Landslide (1)

2.2.8 Rockfall (1)

(8)

2.3 Landforms associated with horizontal strata

2.3.1 K – butte (1) (1)

L – mesa (1) (1)

2.3.2 DIFFERENCES

K – height is longer than width (2) (2)

L – width Is longer than height (2)

SIMILARITIES

Both landforms have flat tops (2) (2)

2.3.3 Layers of rock that are parallel to the earth's surface (2) (2)

Layers are separated by bedding plains (2) (2)

Rock that have many joins (2) (2)

Volcanic eruptions that form layers of successive basaltic lava (2) (2)

(Any TWO)

2.3.4 Tourist attraction (2) (2)

a source of income (2) (2)

2.4 Structural landscapes that developed from massive igneous strata

2.4.1 Chemical (1) (1)

Mechanical (1) (1)

2.4.2 Hard, resistant (2)

Seams and tears occur (2)

Susceptible to weathering (2)

Susceptible to exfoliation or peeling of rock layers (2) (4)

(Any TWO)

2.4.3 A – C – B (2) (2)

2.4.4 Can be used to attract tourists (2) (2)

2.4.5 Isolated, exposed pile of rocks (2)

Rocks are rounded stacked on top of each other (2)

Rocks only joined at bottom (2)

Granite or dolerite (2) (6)

(Any THREE)

2.5 Slope elements

2.5.1 A - crest/waxing slope

B - cliff/free face/scarp

C - talus/scree/debris/constant slope

D - Pediment (4)

2.5.2 Because of the difference in the resistance of the horizontal rock strata (1)

2.5.3 Can be used for mountain climbing, mountain trails, Ab sailing (2)

2.5.4 A – Convex (2)

Soil creep (2)

Top of slope (2)



B – Nearly vertical slope (2)

Exposed rock (2)

C - Consist of weathered material (2)

Angle of approximately 35° (2)

Slope remains constant (2)

D – Bottom of slope (2)

Concave shape (2)

Gentle slope (2)

Covered with soil layer (2)

Fertile soil (2) (8)

(Any ONE of each slope element)

SECTION B: GEOGRAPHICAL SKILLS AND TECHNIQUES

Question 3

3.1 **MAP SKILLS AND CALCULATIONS**

3.1.1 C (1) (1)

3.1.2 D (1) (1)

3.1.3 VE= VS/HS

20m x 100= 2000m (1)

1: 2 000

1:50 000

1/2000

1/50 000

1 x 50 000

2000 X 1 (1)

50 000 / 2000



25 times Bigger than horizontal scale (1)

(3)

3.1.4 Gradient = $\frac{VI}{HE}$

VI = 1567m – 1420m = 147m (1)

HE = 9.6 cm X 100 = 960m (1)

$\frac{147m}{960m} \quad \frac{147m}{147\ m}$ (1) $= \frac{1}{6.5}$ (1)

G =1: 7 (1)

Steep (1)

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(5)

3.2 **MAP INTERPRETATION**

3.2.1 C (1) (1)

3.2.2 a) A (1) (1)

b) streams join downstream (2)

Contour lines point upstream (2) (2)

(Any ONE)

3.2.3 Non - Perennial rivers (1) (1)

3.2.4 a) Ferrel cell (1) (1)

b) South Africa lies on the 30° line of latitude, which is mostly influenced by the ferrel cell and westerlies winds (2) (2)

3.2.5 a) Rockfall (very steep slopes) (1) (1)

b) Road closure (2)
Damage properties (cars, settlements, house)
Kill or injure people (2)
(Any ONE) (2)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS

3.3.1 Vector (1) (1)

3.3.2 Uses points, lines and polygons (2) (2)

3.3.3 Point = reservoir (1) Windpump (1)
(Any ONE)
Line = Fence (1) Wall (1) Non-perennial streams (1)
(Any ONE)

Polygon = Perennial water (1) cultivated lands (1)

(3)

3.3.4 Satellite images can inform authorities about upcoming weather conditions using remote sensing (2)

[30]