MARKING GUIDELINES

EXAMINATION	NATIONAL SENIOR CERTIFICATE
GRADE	12
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SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE

SUID-AFRIKAANSE KOMPREHENSIEWE ASSESSERINGSINSTITUUT

FINAL APPROVED MARKING GUIDELINES	
DATE OF MEETING	
UMALUSI MODERATOR	
CHIEF MARKER	
INTERNAL MODERATOR	

SECTION A

QUESTION 1: CLIMATE AND WEATHER

1.1

1.1.1	daily	(1x1) (1)
1.1.2	(a) anabatic / valley winds	(1x1) (1)
	(b) katabatic / mountain winds	(1x1) (1)
1.1.3	day	(1x1) (1)
	insolation	(1x1) (1)
1.1.4	(a) descending	(1x1) (1)
	(b) (Drop) below zero / may be zero	(1x1) (1)

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1.2

1.2.1	Warmer	
1.2.2	High rise buildings	
1.2.3	Evaporation	
1.2.4	Hygroscopic nuclei	
1.2.5	Acid rain	
1.2.6	Smog	
1.2.7	Inversion layer	
1.2.8	Light reflective	(8x1) **[8]**

1.3

1.3.1	Polar easterlies	(1x1) (1)
1.3.2	60–80 degrees N and S	(1x1) (1)
1.3.3	Frontal / wave stage	(1x1) (1)
1.3.4	Cold front = cumulonimbus (cb) Warm front = nimbostratus (ns)	(2x1) (2)
1.3.5	Occlusion – cold front has caught up with warm front and is forcing all warm air off the ground. System is dissipating (breaking up).	(2x2) (4)

1.3.6 Western Cape – extensive rain over large area, strong winds, low temperatures, possible snow on high lying areas for a few days. Humidity high.

Interior – short lived cold spell, temperatures very low, some rain and snow in high lying areas. Humidity low. (3x2) (6)

[15]

1.4

1.4.1 Tropical cyclone / typhoon / hurricane (1x1) (1)

1.4.2 5–30 degrees north and south (1x1) (1)

1.4.3 (a) B (1x1) (1)

(b) Clockwise spiralling of clouds around the eye (1x2) (2)

(c) The eastern side of continents are warmed by warm ocean currents. / Oceans are warm on the eastern side of continents.

They are driven by the tropical easterly winds / occurs in the tropical easterly wind belt. Warm moist air evaporates into the area and this feeds these systems. (1x2) (2)

1.4.4 PREPARE

- Build storm shelters for the community.
- Put early warning systems in place so that people can evacuate in time.
- Ensure buildings is built to withstand gale force winds and flooding.
- Do / fund research on tropical cyclones and do storm tracking.
- Build sea walls for storm surges.
- Do emergency drills and educate people on what to do when a storm hits.
- Limit development in coastal zones where tropical cyclones are more likely to make landfall.

MANAGE:

- Place sandbags at houses to redirect floodwaters.
- Arrange evacuation teams to assist people to evacuate in time.
- Give out emergency relief packages.
- Ask for help from international relief organisations.

MUST REFER TO <u>PREPARE AND MANAGE</u>. (4x2) (8)

[15]

1.5

1.5.1 Summer (1x1) (1)

1.5.2 (a) Coastal low (1x1) (1)

(b) It moves from west to east along the coast / follows the coastline / goes in a southerly direction and then moves north-east. (2x1) (2)

1.5.3 Onshore flow behind the low pressure brings clouds / mist / fog.

Offshore flow ahead of the low pressure brings clear, warm weather. (2x2) (4)

1.5.4 (a) No (1x1) (1)

(b) Strong pressure gradient is needed from the interior to the coast. High pressure in the interior and low pressure at the coast.

Kalahari high pressure must be present in the interior. (3x2) (6)

[15]

TOTAL QUESTION 1: [60]

QUESTION 2: GEOMORPHOLOGY

2.1

2.1.1 D

2.1.2 D

2.1.3 B

2.1.4 A

2.1.5 B

2.1.6 D

2.1.7 C

2.1.8 C (8x1) **[8]**

2.2

2.2.1 H

2.2.2 K

2.2.3 D

2.2.4 I

2.2.5 B

2.2.6 C

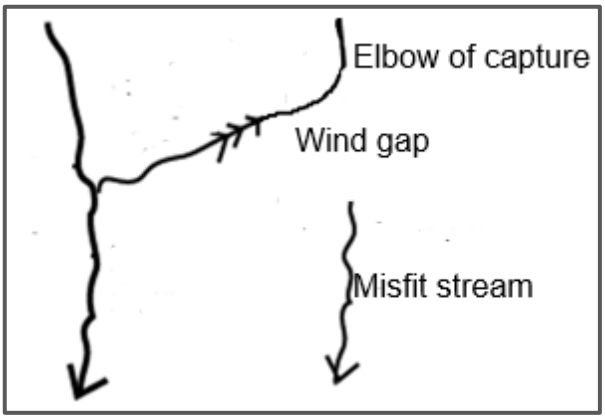
2.2.7 J (7x1) **[7]**

2.3

2.3.1 River capture – When a more energetic river meets the course of another river and divert its flow into its own drainage basin (CONCEPT) (1x2) (2)

2.3.2 Steeper gradient
Larger volume
Flows over weaker strata (Only ONE) (1x1) (1)

2.3.3



Award one mark for the sketch. (1)
Award one mark each for the correct position and label for the following:
Elbow of capture (1)
Wind gap (1)
Misfit stream (1)
(DO NOT MARK THE MIRROR IMAGE.)

(4x1) (4)

2.3.4 A knickpoint will form in the pirate river where it cuts through the watershed.
The captor stream will receive additional water from the less powerful river.
The volume of the captor stream increases which increases the energy of the river / causes it to become over graded.
The velocity of the river will increase due to increased volume.
River is rejuvenated, enabling it to erode more vertically.
The river valley will become deeper due to increased vertical erosion.
A gorge is eroded that retreats upstream through headward erosion.
Landforms of rejuvenation may form, for example river terraces (accept other examples).
(ANY FOUR – REFER TO HOW AND WHY) (4x2) (8)

[15]

2.4

2.4.1 Upper course (1x2) (2)

2.4.2 **A** – Rapid

B – Waterfall (2x1) (2)

2.4.3 The bed of the river is uneven and rocky.
The river flows over a resistant layer of rock that is inclined downstream. (1x2) (2)

2.4.4 (a) Plunge pool (1x1) (1)

(b) Hydraulic action of the falling water and abrasion of the sediments creates a plunge pool at the bottom of the waterfall.
Over time the lip / more resistant rock is undercut and its position moves upstream.
This process called headward erosion leaves a deep gorge / ravine downstream of the waterfall. (2x2) (4)

2.4.5 A waterfall is a tourist attraction that brings people to the area that buy goods from the local community.
The local community can sell crafts/products to the tourists.
Tourists rent accommodation and buy food from the local community.
Businesses can grow / new businesses can be started.
Jobs can be created for the community.
The multiplier effect can reduce poverty in the area. (2x2) (4)

[15]

2.5

2.5.1 Catchment area – The drainage area that supplies water to a river, including water from rainfall and underground water. (1x2) (2)

2.5.2 74% (1x1) (1)

2.5.3 measure depths / measure rainfall / take photographs (1x1) (1)

2.5.4 (a) Watershed (1x1) (1)

(b) Precipitation that falls on the earth's surface infiltrates into the soil / Water percolates through into permeable rock / aquifer / underground supplies.
Water could also runoff directly into rivers creating pollution.
The water quality below and above ground, would be negatively affected. (2x2) (4)

2.5.5 <u>Authorities</u>
Engage community to advise about buffer zone around boreholes.
Ensure relocation of kraals if too close to boreholes.
Move boreholes if too close to gravesites.

<u>Improve infrastructure</u> this way:
Ensuring replacement of pit latrines throughout the area – government funding needed.
Regularly remove household waste and refuse.
Provide running water to households and proper sewage systems for the removal of it once used.

Control the use of boreholes to maintain steady river flow. (3x2) (6)

[15]

TOTAL QUESTION 2: [60]

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 MAP SKILLS AND CALCULATIONS

3.1.1 A (1x1) (1)

3.1.2 B (1x1) (1)

3.1.3 D (1x1) (1)

3.1.4 VI = 1 625,4 m – 1 593 m = 32,4 (1) m
HE = 5,6 (1) cm x 500 = 2 800 (1) m [Range 5,5 cm – 5,7 cm]
[Range 2 750 m – 2 850 m]

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

$$= \frac{32{,}4 \text{ m}}{2\,800 \text{ m}}$$ (1) Substitute into the formula

= 1: 86,4 [Range 1: 84,8 to 1: 87,9] (4x1) (4)

3.1.4 (a) Gentle (1x1) (1)

(b) Contours on the map are far apart from one another. (1x2) (2)

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3.2 MAP INTERPRETATION

3.2.1 C (1x2) (2)

3.2.2 B (1x1) (1)

3.2.3 (a) No (1x1) (1)

(b) Faces north-east (1x1) (1)

(c) It is halfway up the slope so it may be in the thermal belt, therefore warmer. (1x2) (2)

3.2.4 (a) Stream order 2 (1x1) (1)

(b) Extended period of heavy rainfall will increase run-off in the area. More streams will form in the area, increasing the stream order. (1x2) (2)

3.2.5 (a) Prevailing winds blow in that direction. (1x1) (1)

(b) Flat land along a spur (1x1) (1)

[12]

3.3 GEOGRAPHIC INFORMATION SYSTEMS

3.3.1 (a) Attribute

Spatial (2x1) (2)

(b) Topography/relief (1x1) (1)

3.3.2 (a) Buffering – A zone drawn around a mapped feature measured in units of distance or time
The demarcation of an area around a mapped feature
(CONCEPT) (1x2) (2)

(b) Yes (1x1) (1)

3.3.3 Regular data can be collected and colours compared. Darker will indicate depth and therefore the dam is full. Lighter will indicate lack of depth and therefore the dam will be less full, or empty. (1x2) (2)

[8]

TOTAL QUESTION 3: [30]

GRAND TOTAL: [150]

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