GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

SUBJECT	:	GEOGRAPHY
CODE	:	GEOG
GRADE	:	10
TERM	:	ONE
EXAMINER	:	JOHANNESBURG NORTH
MODERATOR	:	JOHANNESBURG WEST
TOTAL TIME	:	1 hour
CAPS WEIGHTING %	:	20
TERM WEIGHTING %	:	60
DATE OF IMPLEMENTATION	:	MARCH 2024

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of ONE question.
2. Answer ONE question for 60 marks.
3. All diagrams are included on the question paper
4. Leave a line between the subsections of the question answered.
5. Number the answers correctly according to the numbering system used in this question paper.
6. Number the answers in the centre of the line.
7. Do NOT write in the margins of the ANSWER SHEET
8. Draw fully labelled diagrams when instructed to do so.
9. Answer in FULL SENTENCES, except when you must state, name, identify or list.
10. Write neatly and legibly.



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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

1.1 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question number (1.1.1–1.1.7) in the ANSWER BOOK, for example 1.1.8 J.

COLUMN A		COLUMN B	
1.1.1	Transfer of heat through a mass flow of material. **C Conduction**	A	Maritime Climate
1.1.2	Transfer of heat through collisions of particles that make up the material liquids and gases. **D Convention**	B	Continental Climate
1.1.3	Incoming Solar Radiation **F Insolation**	C	Conduction
1.1.4	Terrestrial radiation **H Long wave radiation**	D	Convention
1.1.5	Air temperatures decrease with height in the troposphere. **I Altitude**	E	Short wave radiation
1.1.6	Climate influenced by the ocean current nearby. **A Maritime Climate**	F	Insolation
1.1.7	A relatively dry climate with very hot summers and very cold winters **B Continental Climate**	G	Chlorofluorocarbons (CFCs)
		H	Long wave radiation
		I	Altitude

(7 x 1) (7)

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1.2 Provide the correct layer of the atmosphere in which the following descriptions best describe. Write only the layer of the atmosphere next to the question number. For example, 1.2.9 Troposphere. Choose from the following layers **(Troposphere, Stratosphere, Mesosphere & Thermosphere)**. Only ONE layer can be provided for each description.

1.2.1 All weather processes take place in this layer. **Troposphere**

1.2.2 Uppermost layer of the atmosphere. **Thermosphere**

1.2.3 The ozone layer is situated in this layer. **Stratosphere**

1.2.4 Characterise by an increase in temperature. Stratosphere/Thermosphere

1.2.5 Layer in which planes fly. **Troposphere/Stratosphere**

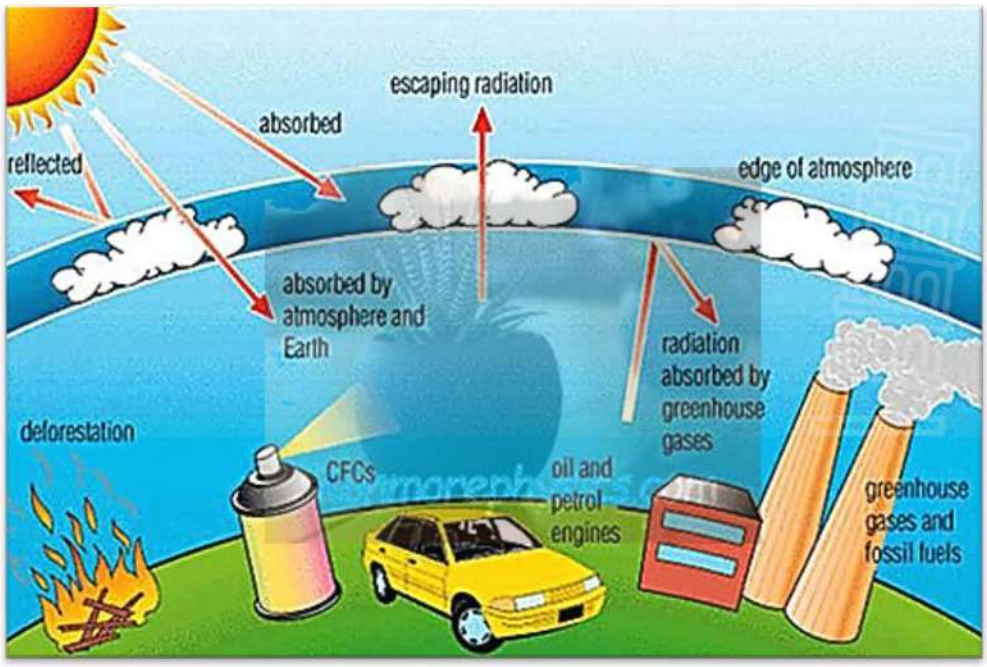
1.2.6 Layer that supports live on Earth. **Troposphere**

1.2.7 The coldest layer of the atmosphere. **Mesosphere**

1.2.8 Warmed by the Earth's long-wave radiation, and processes like conduction and convection. **Troposphere** (8 x 1) (8)

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1.3 Study FIGURE 1.3 which depicts global warming and answer the questions that follow.



[Source: Google Images]

1.3.1 Define the concept "Global Warming". (2)
(1 x 2)
Global Warming refers to the increase in avaerage temperatures on Earth

1.3.2 Identify THREE causes of global warming illustrated on the FIGURE ab
CFCs
Cars
Fossil fuels from industries
Deforestation [ANY 3]

(3 x 1) (3)

1.3.3 Discuss TWO consequences of global warming. (4)
(2 x 2)
High temperatures causes glaciers to melt

Extinction of certain animal and plant species

Rise in sea level which leads to coastal flooding

Altered weather patterns

Extreme droughts, heat waves & heavy rainfall

Likelihood of expansion of deserts [ANY 2]



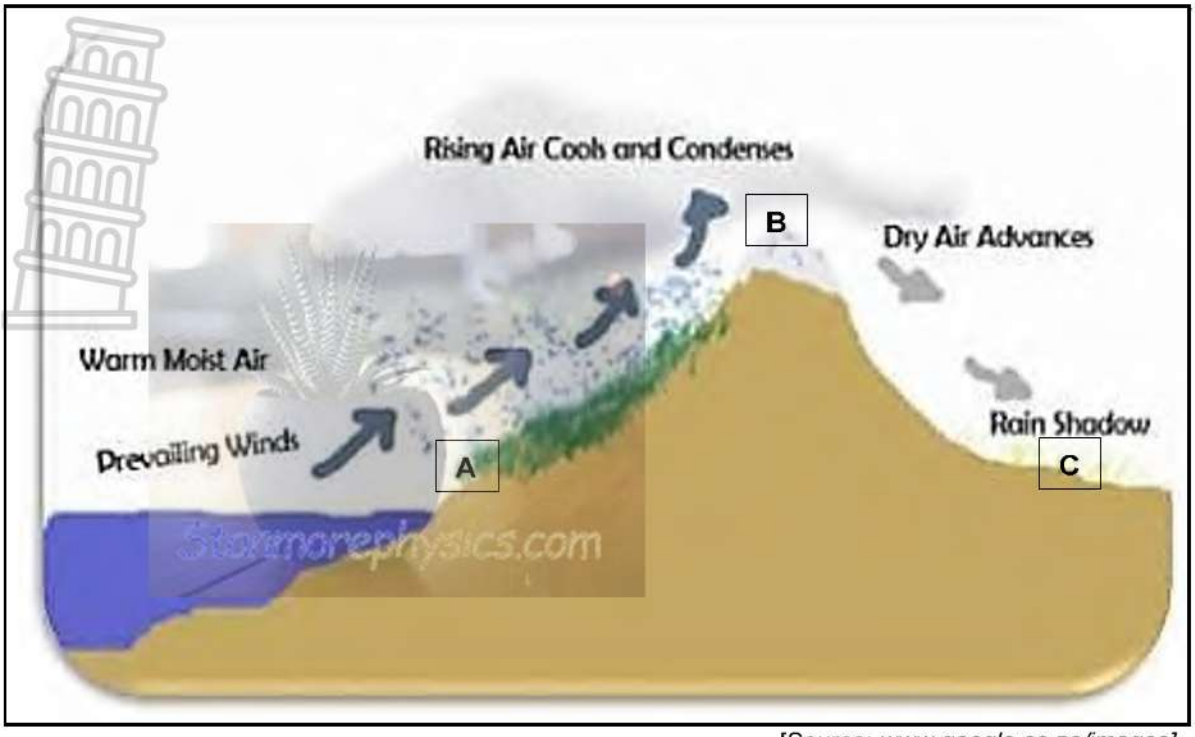
1.3.4 Suggest any THREE strategies that people can use to minimise global warming.

Rewards and incentives for reducing carbon emissions
Carbon taxes
Recycling (manufacturing new products produces more Carbon dioxide)
Clean energy sources eg solar power, wind power etc.
Planting more trees and conserving forest
Educating people on ways to reduce carbon footprint (6)
Use of public transport [ANY 3]

(3 x 2)

[15]

1.4 Refer to FIGURE 1.4 illustrating a rainfall type and answer the questions that follow.



[Source: www.google.co.za/images]

1.4.1 What type of rainfall is depicted by FIGURE 1.4

Relief /Orographic Rainfall (1 x 1) (1)

1.4.2 Identify leeward side and windward side of the mountain as A, B or C

Leeward side : C
Windward side: A (2 x 1) (2)

1.4.3 Rainfall is common on side A of the mountain. Justify this statement.

As warm air rises on the windward side of the mountain.

Warm air cools down.

Condensation takes place,

hence rainfall common on this side of the mountain. [ANY 2]

(1 x 2) (2)

1.4.4 Explain why the temperature increases as you move downwards from B to C.

Temperatures decreases with increase in altitude
The higher you go, the colder it gets, thus the lower you go, the warmer it gets.
Air compresses as you move down the slope and temperatures increase.
Adiabatic heating. [ANY 2] (1 x 2) (2)

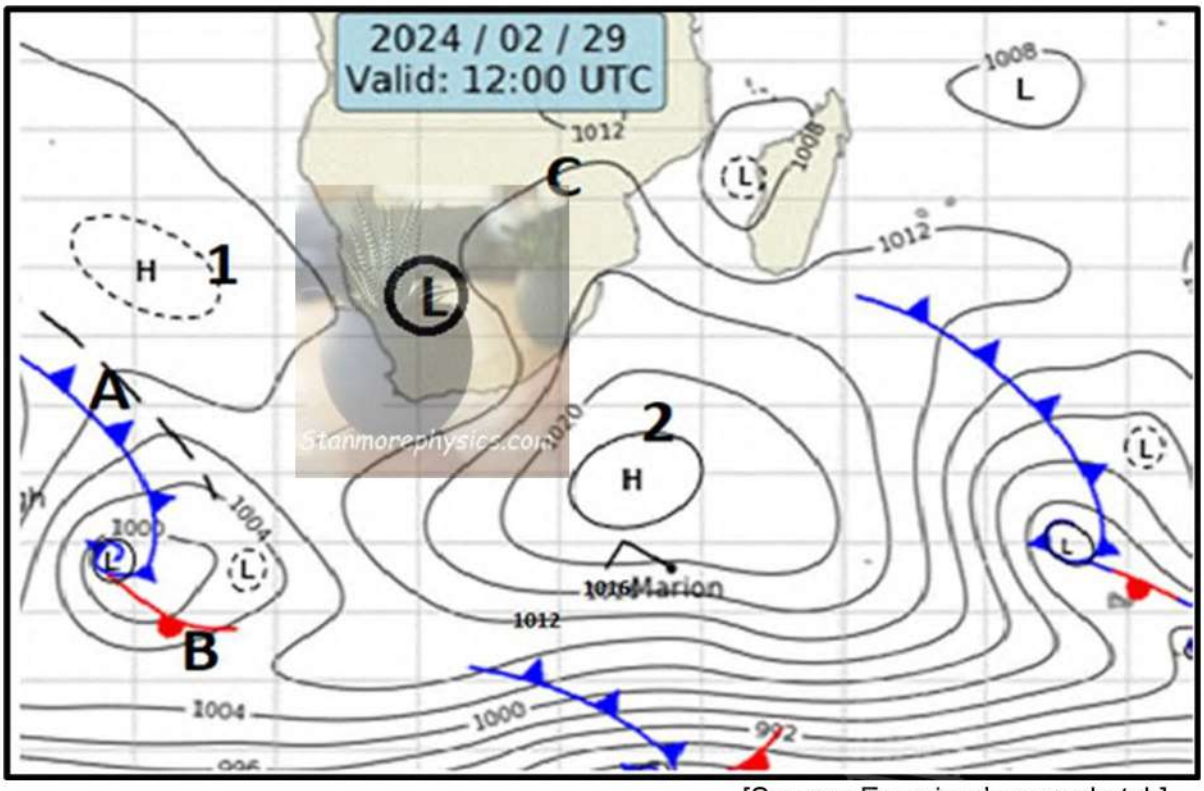
1.4.5 In a paragraph of approximately EIGHT lines, discuss how this type of rainfall in FIGURE 1.4 is formed.

Relief rain forms when a warm moist wind blows from the ocean onto the mountain.
The wind is forced to rise.
The rising wind/air cools down and condensation takes place.
Then the formation of clouds and rain occurring on the side facing the ocean.
The dried air rushed on the leeward side of the mountain.[ANY 4]

(4 x 2) (8)

[15]

1.5 Refer to FIGURE 1.5 below showing the synoptic weather map of South Africa and answer the questions that follow.



[Source: Examiner's own sketch]

1.5.1 Define the term *Isobars.*

The isobars are the lines on the map joining places of equal air pressure. (1 x 2) (2)

1.5.2 Label fronts A and B respectively. (2)

A = Cold front
B = Warm front (2 x 1)

1.5.3 Identify the season is indicated on the synoptic weather? (Winter or Summer).

Summer (1 x 1) (1)

1.5.4 Give ONE reason for your answer to QUESTION 1.5.3 above.
Low pressure cell in the interior
Date
No Kalahari high in the interior
South Indian and South Atlantic high-pressure cells have shifted further south[ANY 1]

(1 x 2) (2)

1.5.5 Explain the formation of High pressure cell 1 and 2.
Cold air converges in the upper atmosphere
Cold air is heavy and thus
Subsides/sinks to the surface
Cold air diverges on the surface
The circulation of air is an anticlockwise direction[ANY 2]

(2 x 2) (4)

1.5.6 Discuss weather conditions associated with front A.
Cold weather conditions
Tall cumulonimbus clouds
Heavy rainfall
Thunderstorms and lightning
Hail
Snow on high lying places [ANY 2] (2 x 2) (4)
[15]

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