LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

VHEMBE WEST DISTRICT

NATIONAL SENIOR CERTIFICATE

GRADE 11

GEOGRAPHY CONTROLLED TEST

07 MARCH 2024

MARKS: 60

DURATION: 1.5 HRS

N.B This question paper is consisted of TEN pages.

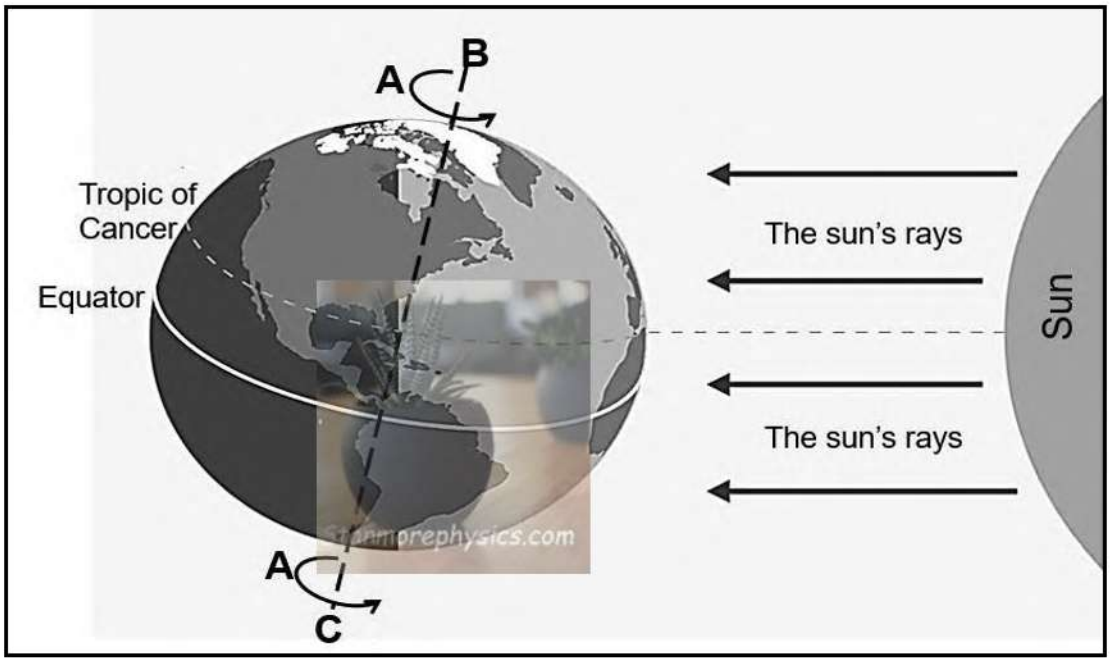
INSTRUCTIONS AND IN FORMATION

1. The question paper consists of ONE question.
2. ALL diagrams are included in the question paper.
3. Where possible, illustrate your answers with labelled diagrams.
4. Leave a line between subsections answered.
5. Number your answers correctly according to the numbering system used in this question paper.
6. Do NOT write in the margins of your ANSWER BOOK.
7. Write neatly and legibly.

QUESTION 1: THE ATMOSPHERE

1.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, for example 1.1.9 D.

Refer to the sketch below of the earth's axis to answer QUESTIONS 1.1.1 to 1.1.5.



[Adapted from https://www.spacecentre.nz/resources/faq/solar-system/earth/rotation-speed.html]

1.1.1 The season, the southern hemisphere experiences is …

A autumn.
B winter.
C spring.
D summer.

1.1.2 The arrows at **A** shows the … of the earth.

A circle of illumination
B revolution
C rotation
D circle of parallelism

1.1.3 The sketch illustrates a/an … situation, with the days being … than/to the night at the equator.

(i) solstice
(ii) equinox
(iii) longer
(iv) equal

A (i); (iii)
B (i); (iv)
C (ii); (iii)
D (ii); (iv)

1.1.4 Line **B**–**C** represents the … of the earth's axis and is … throughout the year.

(i) dynamism
(ii) parallelism
(iii) consistent
(iv) inconsistent

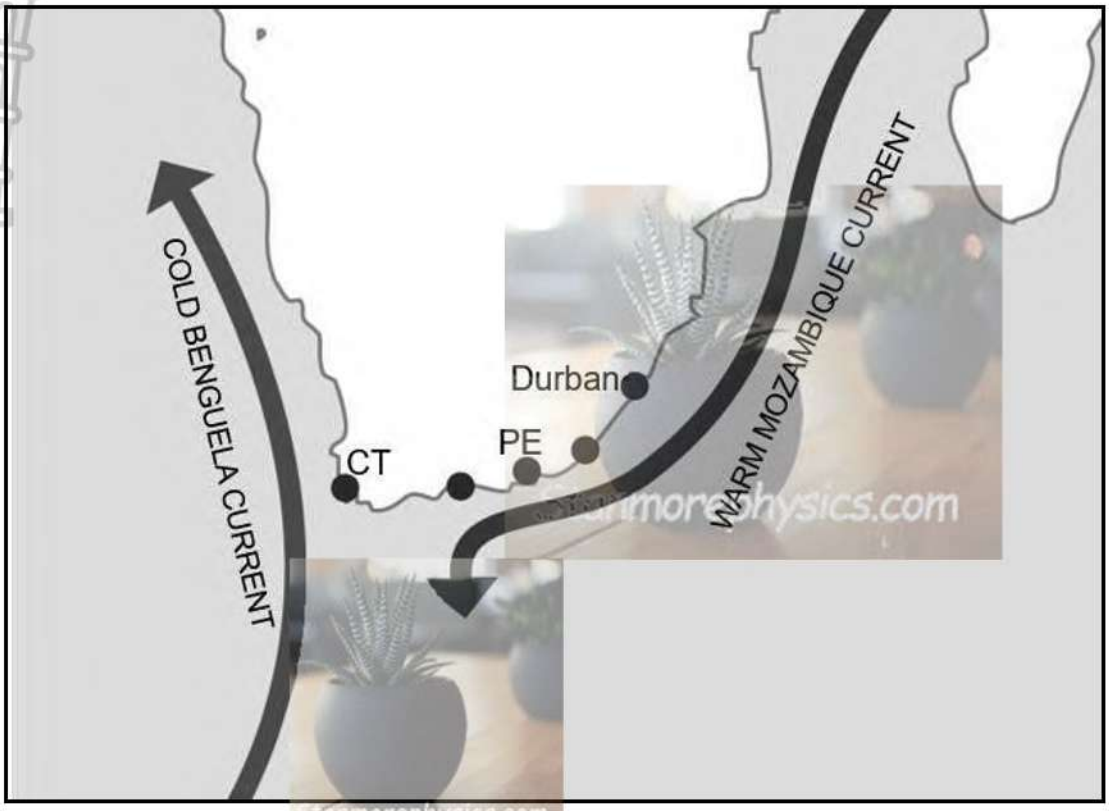
A (i); (iii)
B (i); (iv)
C (ii); (iii)
D (ii); (iv)

1.1.5 The amount of insolation that the earth receives depends on … and …

(i) latitude
(ii) rotation
(iii) seasons
(iv) revolution

A (i); (iii)
B (i); (iv)
C (ii); (iii)
D (ii); (iv)

Refer to the below sketch on ocean currents to answer QUESTIONS 1.1.6 to 1.1.8.



[Adapted from https://www.google.com/search?q=Warm+Mozanbique+current&tbm=]

1.1.6 The ocean currents in the sketch play a combined role in shaping weather patterns by …

A increasing temperatures.
B moderating temperatures.
C decreasing temperatures.
D increasing rainfall.

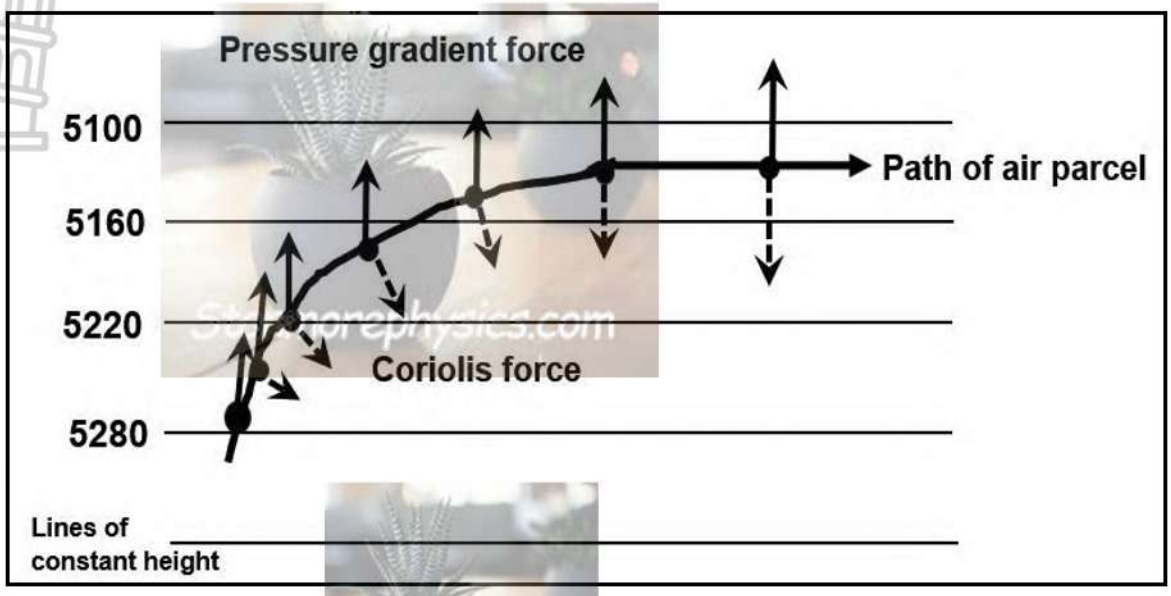
1.1.7 The cold Benguela Ocean current transfers … air from the poles to the … zones.

A cold; temperate
B warm; coastal
C cold; coastal
D warm; desert

1.1.8 Warm ocean currents move from the … to the …

A poles; equator.
B west; poles.
C east; equator.
D equator; poles. (8 x 1) (8)

1.2 Refer to the sketch on the direction and speed of wind. Choose the correct word(s)/number(s) from those given in brackets to complete the following sentences. Write only the word(s)/number(s) next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK.



[Source: Examiner's own sketch]

1.2.1 The lines in the sketch showing places of equal pressure are known as (contours/isobars).

1.2.2 The high pressure is represented by (5280/5100) hectopascals.

1.2.3 (Coriolis/Pressure gradient) force determines the speed of the wind.

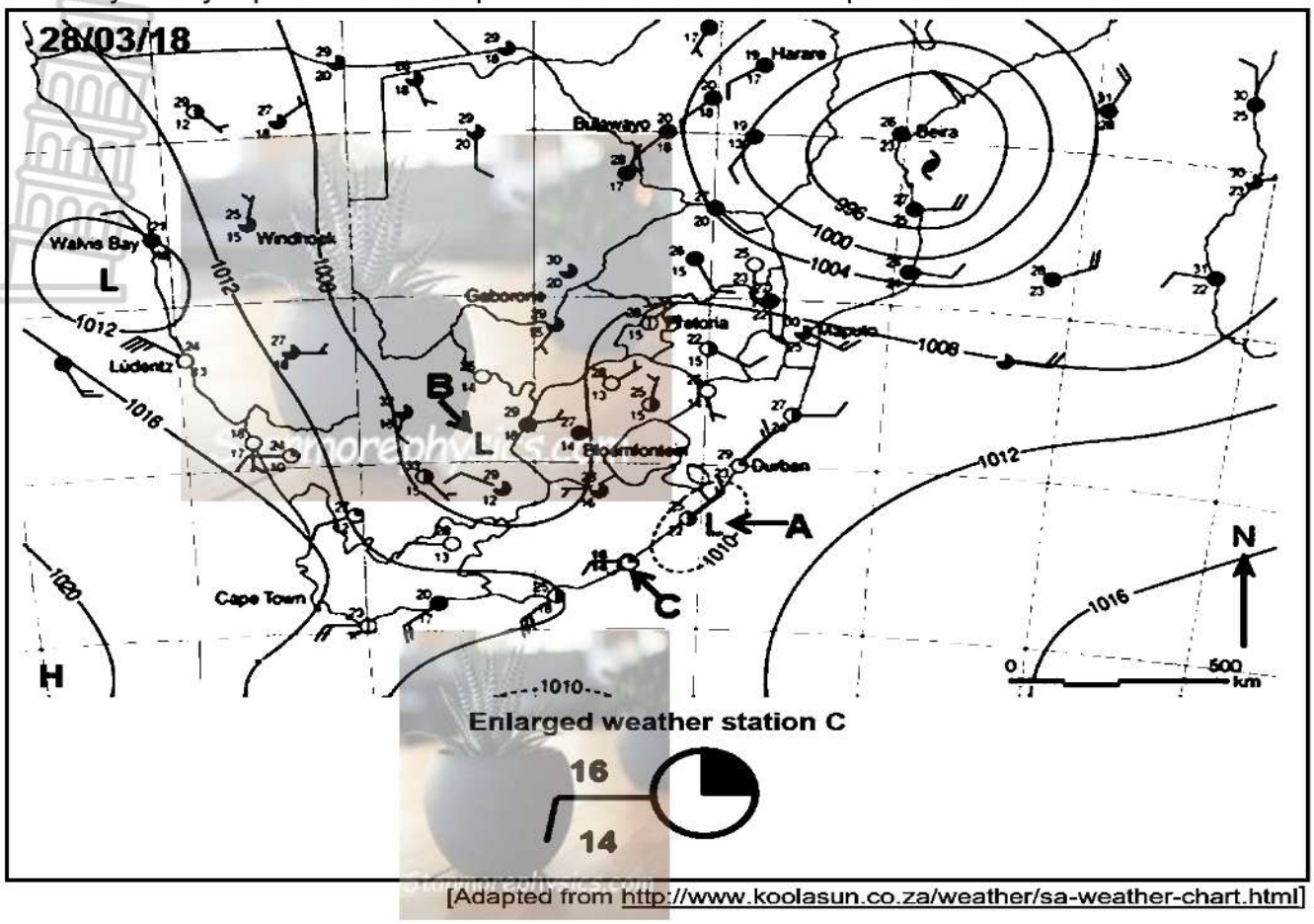
1.2.4 Winds deflect or change direction because of (Pressure gradient/ Coriolis force).

1.2.5 The direction of the wind in the sketch above represents conditions in the (southern/northern) hemisphere.

1.2.6 The greater the difference in air pressures between high- and low-pressure cells, the (stronger/weaker) the wind.

1.2.7 Geostrophic (balance/flow) is a theoretical wind that blows parallel to the isobars. (7x1) (7)

1.3 Study the synoptic weather map below and then answer questions that follow:



[Adapted from http://www.koolasun.co.za/weather/sa-weather-chart.html]

1.3.1 Name the lines joining all places of the same air pressure on the synoptic weather map (1X1) (1)

1.3.2 Identify the season represented by this synoptic weather map (1X1) (1)

1.3.3 Provide any **TWO** pieces of evidence visible in this synoptic weather map to prove your answer to question 1.3.2 above. (2X2) (4)

1.3.4 The following questions are based on the weather system **A**

(a) Identify the weather system **A** (1X 2) (2)

(b) Describe the manner in which air circulate around the weather system **A** (1X2) (2)

1.3.5 Give a full description of the weather conditions as recorded in the weather station **C** (5X1) (5)

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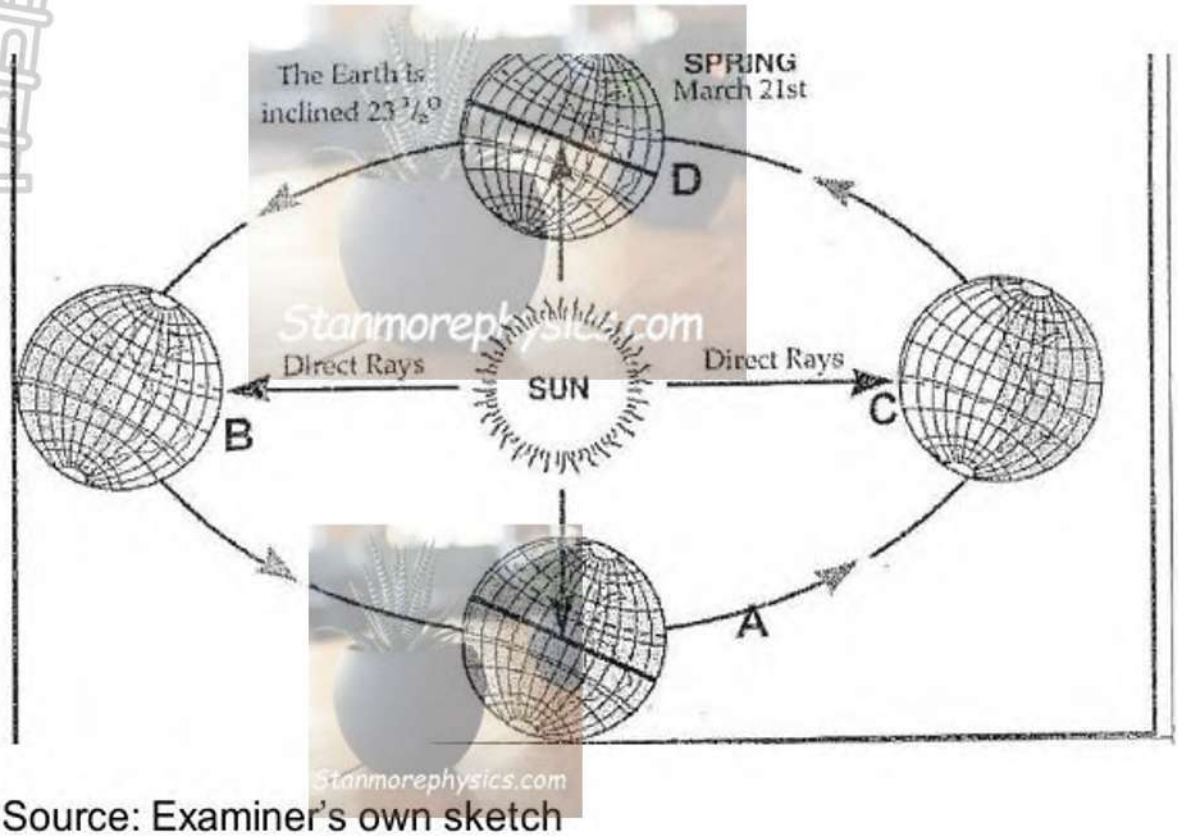
1.4. Refer to Figure 1.4 showing Earth movements and answer the following questions

FIGURE 1.4 EARTH MOVEMENTS



Source: Examiner's own sketch

1.4.1. Identify the type of earth movement shown in the diagram. (1x2) (2)

1.4.2. Name the seasonal phenomenon experienced in the Northern Hemisphere on 21 March as indicated on the diagram. (1x2) (2)

1.4.3. In which position of the earth does the Southern Hemisphere experience summer? Choose the correct answer form those given in brackets.(A,B.C) (1x1) (1)

1.4.4. Provide TWO reasons to support your answer in QUESTION 1.4.3. (2x2) (4)

1.4.5. Describe the position of the sun when an equinox is experienced. (1x2) (2)

1.4.6. On which two dates do equal day and night occur? (2x2) (4)

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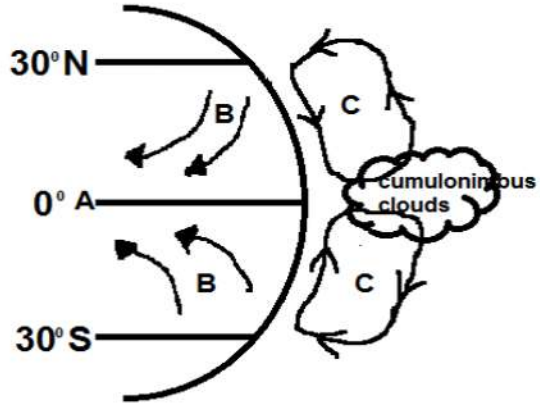
1.5 Global air circulation and the role of oceans in climate control in Africa

1.5.1 Refer to the sketch on global air circulation.



[Source: Examiner's own sketch]

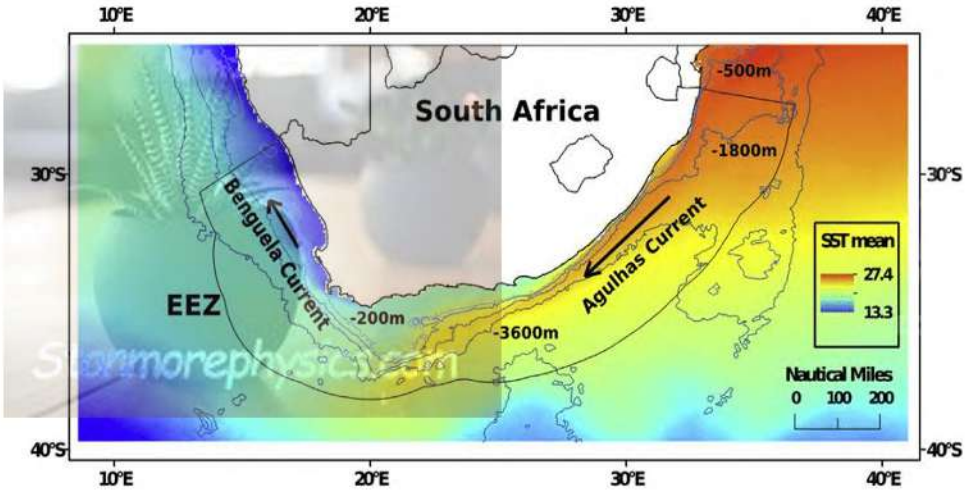
(a) Name the pressure belt at A (1X1) (1)

(b) Identify the winds at B (1X2) (2)

(c) Explain the role of the winds at B in the development of Cumulonimbus clouds at A (1X2) (2)

(d) Name the cell at C and describe how it is formed. (1+2) (3)

1.5.2 Refer to the diagram indicating the role of oceans in climate control in Africa and answer the questions that follow:



[Source: Google Image]

(a) Name the ocean on Africa's west coast and the ocean on Africa's east coast. (2 x 1) (2)

(b) Name the cold ocean current that flows along the west coast of Africa. (1 x 1) (1)

(c) Explain how the ocean current mentioned in QUESTION 1.5.2 (b) influence the temperature and rainfall of the land masses along which it flows. (2 x 2) (4)

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MARKING GUIDELINES

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N.B This Marking Guidelines is consists of FOUR pages.

QUESTION 1

1.1

1.1.1 A (1)

1.1.2 C (1)

1.1.3 B (1)

1.1.4 C (1)

1.1.5 A (1)

1.1.6 B (1)

1.1.7 A (1)

1.1.8 D (1) (8 x 1) (8)

1.2

1.2.1 isobars (1)

1.2.2 5280 (1)

1.2.3 Pressure gradient (1)

1.2.4 Coriolis (1)

1.2.5 northern (1)

1.2.6 stronger (1)

1.2.7 flow (1) (7 x 1) (7)

1.3

1.3.1 Isobars. (1) (1X1) (1)

1.3.2 Summer,(1) (1X1) (1)

1.3.3 The date of the map is 28/03/18 (1)

There is a tropical cyclone (2)

The amount of cloud cover is mostly overcast over the interior (2)

High temperatures (2)

ANY TWO (2X2) (4)

1.3.4 (a) Coastal low (2) (1X2) (2)

(b) Clockwise (2) (1X2) (2)

1.3.5 Air temperature is 16^{o}C (1)

Dew point temperature is 14°C (1)

Cloud amount is 2/8 (1)

Wind direction is eastwards. (1)

Wind speed is 10 knots [1] (5X1) (5)

/15/

1.4

1.4.1. Revolution. (2) (1x2) (2)

1.4.2. Spring Equinox. (2) (1x2) (2)

1.4.3. C (1) (1x1) (1)

1.4.4. Sun rays are directly over the Tropic of Capricorn. (2)

The southern Hemisphere is tilted towards the sun. (2)

Southern hemisphere experiences long days and short nights. (2)

ANY TWO (2X2) (4)

1.4.5. The sun is directly overhead the equator. (2) (1x2) (2)

1.4.6. 21 March. (2)

22 September. (2) (2x2) (4)

/15/

1.5

1.5.1 Global air circulation

(a) A: Equatorial low pressure belt(1) (1X1) (1)

(b) B: Trade winds/ Tropical easterlies (1X1) (1)

(c) Convergence of the wind at the equator results in the convection of the sub-tropical easterlies (2)
The air cools as it rises with altitude, condensation takes place, and cumulonimbus clouds form. (2)
The tropical regions are warm, as the wind blow over

the ocean it collects moisture converge at the equatorial low. (2)
Intensive heating causes evaporation and condensation, thus causing cumulonimbus clouds. (2)

ANY ONE (1X2) (2)

(d) Hadley cell (1)

Air converges at the Equator and forced to rise. (2)
As the air ascends it will reach the top of the troposphere and diverge towards the poles.(2)
At around 30° north & south of the equators, the air has lost heat and sinks creating a stable, high pressure zone (Sub-tropical high-pressure belt.(2)
The air then diverges at the surface and flows towards the equator (2)

ANY ONE (1+2) (3)

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1.5.2

(a) West coast: Atlantic ocean

East coast : Indian ocean (2x1) (2)

(b) Cold Benguela current (1x1) (1)

(c) Cold ocean currents bring dry (2), cold air mass (2) therefore lower temperatures (2) over the land mass and less rainfall (2) (2x2) (4)

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