NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2020

GEOGRAPHY: PAPER II

MARKING GUIDELINES

Time: 1½ hours 100 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

QUESTION 1 ATLAS USE, MAP ORIENTATION AND TECHNIQUES, FLUVIAL PROCESSES, SETTLEMENT

[Source: <https://www.lowland-group.com>]

Fact File: Hoedspruit

- HOEDSPRUIT is a small tourism town in the Central Lowveld nestled between the Kruger National Park and the Molatse (Blyde) River Canyon.
- Hoedspruit is surrounded by the largest privately owned conservation area in the world.
- Hoedspruit is a major agricultural contributor to the country's economy specialising in mango and citrus production.

[Source: Examiner]

Refer to the Map Source Page to answer all the questions that follow.

1.1 The Lepelle (Olifants) River is part of the Greater Olifants River Catchment Area. Answer the following questions on this catchment area.

1.1.1 The altitude of the Lepelle River at A (D1) is …

400 m	
420 m	
440 m	**X**
460 m	**X**

Point A was not visible as either directly on the 460m contour or below so both accepted.

1.1.2 The altitude of the Lepelle River at B (A5) is …

400 m	**X**
420 m	
440 m	
460 m	

1.1.3 The distance from A (D1) to B (A5) along the Lepelle River is …

9 km	
11 km	**X**
13 km	
15 km	

1.1.4 The gradient of the Lepelle River from A (D1) to B (A5) is …

1 : 100	
1 : 150	
1 : 200	**X**
1 : 250	**X**

Calculations:

460m – 400m = 60m OR 440m – 400m = 40m
60 : 11 000 40 : 11 000
1: 183 1 : 275
Closest fit are both answers above

1.1.5 There are features evident on this map extract that prove that the Lepelle River is in its middle course. Circle the FOUR features that are the strongest evidence of this.

Meanders have formed	Potholes evident	Vertical erosion most likely	Canyon has developed	Exotic river flow
Waterfall	Gentle gradient most likely	Braiding evident	Shallow, u-shaped transverse profile is most likely	Oxbow lake has formed

If 5 have been circled (and 4 are correct) a MAX of 3 can be awarded

1.1.6 The point where the Lepelle River joins the Olifants River is a …

knick point	
confluence	**X**
tributary	
elbow of capture	

1.1.7 The dominant drainage pattern evident in block B1/2 is …

parallel	
trellis	
dendritic	**X**
radial	

1.1.8 (a) The Ndlovumzi Nature Reserve and the lodge owners, indicated by the pink polygon on Map 1, do not rely solely on the Lepelle River for a sustainable water supply.

True	**X**
False	

(b) Provide a reason for your answer above.

Although there is a perennial river, most people have reservoirs, meaning they need to store water for the dry months.
DAMS cannot be used as an answer as NO dams are visible in polygon.

1.2 There are two temporary base levels (TBLs) of erosion visible on the Lepelle River in Map 1.

1.2.1 Circle these two TBLs in the box below.

waterfalls	(rapids)	dam	furrows	(weir)

If 3 are circled (and 2 are correct) a MAX of 1 can be awarded.

1.2.2 What feature is found on Map 2 at the coordinates below?

24° 21' 25" SOUTH	**Refuse dump**
30° 57' 55" EAST	

1.2.3 The Hoedspruit Aerodrome in D14 on Map 2 is used mainly for tourists and crop-spraying planes.

True	**X**
False	

1.2.4 (a) The magnetic declination for 2021 is …

17° 05 ' W	
17° 14 ' W	
17° 23 ' W	**X**
17° 32 ' W	

(b) The magnetic bearing from Point A (D1) to Point B (A5) on Map 1 is …

True bearing	**43° (accept 40–47)**
Magnetic declination (from Question 1.2.4 (a))	**17° 23 ' W**
Magnetic bearing	**60° 23 '**
Formula: magnetic bearing = true bearing + magnetic declination	

Calculations:

Accept 57° 23' – 64° 23'

If answers to TB and MD are wrong but method of adding two incorrect answers together gives a correct answer 1 mark can be awarded for MB.

For 2 marks BOTH ° and ' need to be present
If only ° and NO ' then only 1 mark can be awarded

1.3 Study the orthophoto extract of the Ndlovumzi Nature Reserve and its lodges as indicated by the pink polygon on Map 1.

1.3.1 Classify the type of settlement seen in C2/3 and B4 in the Ndlovumzi Nature Reserve.

Rural	**X**
Urban	

1.3.2 Using evidence from one of the two maps (topographic or orthophoto), provide TWO reasons for your choice in 1.3.1.

- **Large areas of open bushveld visible on map and photo.**
- **Population density and size would be low in comparison to size of area.**
- **Lodges/buildings are isolated/far away from one another, not compact.**
- **Although tourism is the main economic activity here it is done in rural settings.**
- **No indication of a built-up area/big buildings.**

- **Not a lot of services visible.**
- **Orthophoto shows presence of brown/dirt roads.**
- **Evidence of cultivated land -> farming evident.**

1.3.3 Justify the selection for these game lodge sites in the Ndlovumzi Nature Reserve by using TWO pieces of map evidence (topographic or orthophoto).

- **NB – question is referring to SITE factors.**
- **The sites are wet-point sites as they are next to a river (supply of water and good for game viewing).**
- **The land is relatively flat which is easy to build on.**
- **The sites are north facing therefore warmer and better to settle on.**
- Lodges are built on slip off slope therefore not exposed to rising flood waters as much as cut bank.
- Away from built up area is SITUATION **NB**.

1.4 The area of Hoedspruit (the hat creek or the creek that stole his hat) was given its name in 1844 after the area was flooded in a major cloudburst and one of the landowners lost his prized hat in the rising flood waters of the creek, a tributary to the Lepelle River.

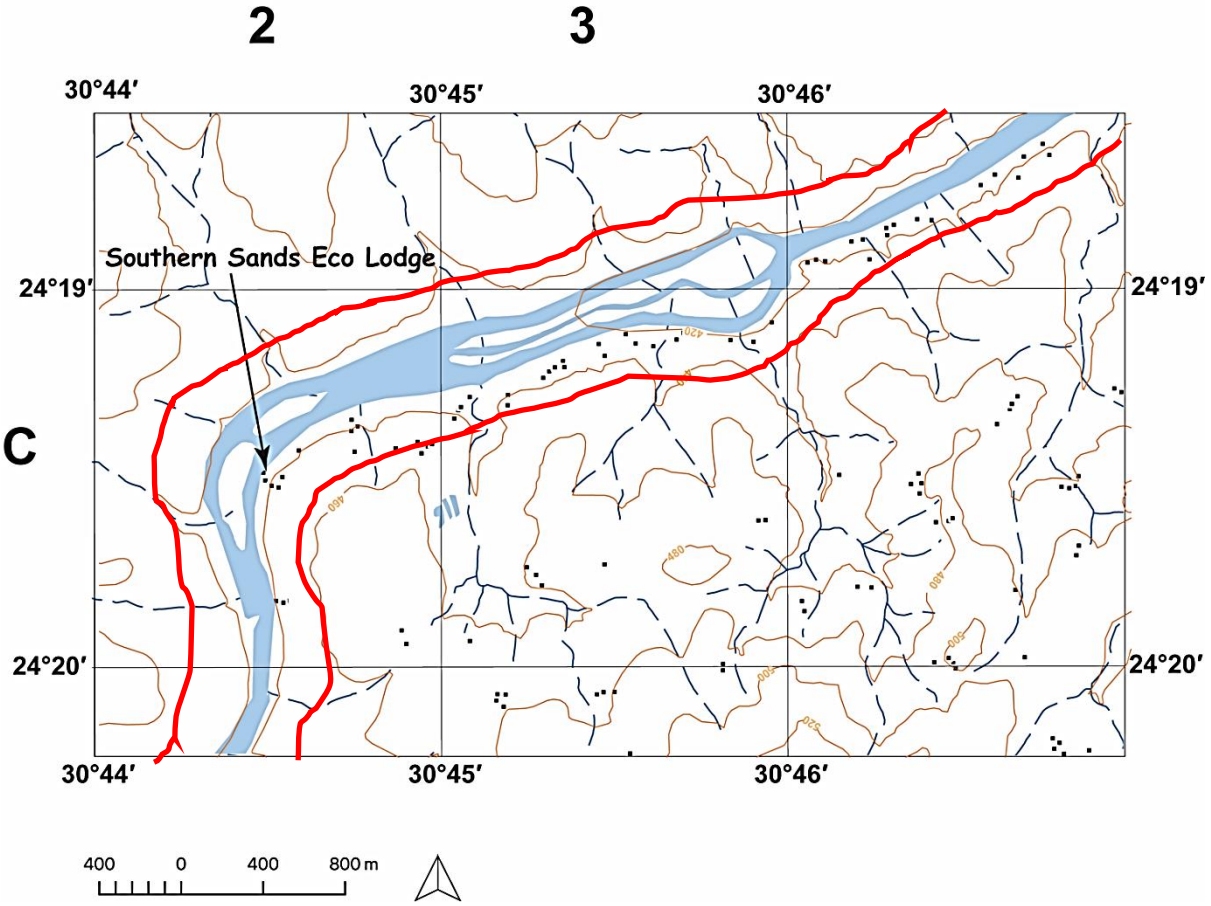
Southern Sands Eco Lodge lies on the banks of the Lepelle River in the Ndlovumzi Nature Reserve (C2). The following photograph from their website shows the Lepelle River in the background.

Photograph 1 – Southern Sands Eco Lodge

[Source: <www.booking.com>]

1.4.1 A GIS-specialist drew a map showing the river and the other lodges. This GIS-generated map appears on the next page. A 240-metre buffer zone will roughly show the 100-year flood line for floods similar to the one in which the former landowner lost his hat. Draw the buffer zone of 240 metres (on both sides of the river) on this map.

Figure 1 – GIS-generated map of the Lepelle River and lodges



Marks to be awarded next to map. Buffer should be visible on BOTH sides of the river for 2 marks. If evident on 1 side only then 1 mark may be awarded.

1.4.2 According to this map, approximately how many lodges fall within this buffer zone?

50 (accept 47–53) lodges

1.4.3 Discuss the implications for the lodge owners within this 240-metre buffer zone in the Ndlovumzi Nature Reserve, if there were to be a cloudburst similar to the one in 1844, mentioned in paragraph 1.4.

The river would most likely flood and these lodges would be damaged/ washed away/economic loss/loss of human life if flood happens while people are asleep. Lodge residents may not be able to travel in and out of the reserve.

1.4.4 Describe and explain the lodge owners' pattern of settlement in Ndlovumzi Nature Reserve.

The pattern is linear (nucleated), along a river (in riparian zone). The reason is so that people can enjoy the peaceful surroundings and a view of the river which attracts game.

1.5 The Lepelle River is a permanent river.

1.5.1 There are TWO map symbols evident on Map 1 that prove that this area receives very seasonal rainfall. Tick the correct options.

Weir	
Reservoirs	**X**
Dams	**X**
Wind pumps	

1.5.2 Drainage density in this area of Map 1 is very low. Drainage density is affected by several factors, namely …

- surface over which water flows (permeability)
- slope of the ground (gradient)
- climatic factors (amount and type of rainfall)
- vegetation cover

Choose ONE factor and provide map evidence to support the statement "drainage density is low".

The rock may be of high permeability allowing infiltration and creating low density (difficult to ascertain with map evidence so may not be chosen).

Gradient is gentle allowing water to spread out (probably permeate into rocks) creating low density (very few contours spaced far apart).

Rainfall here is seasonal giving rise to lots of non-perennial rivers which only flow seasonally for short period of time therefore creating a lower density.

There is vegetation cover (open bushveld and farming evident close by).

Some other answers may include:

- brown landscape shows there has been little rainfall giving low density/ brown landscape shows high evaporation when there is rain and reduced runoff leading to low density.

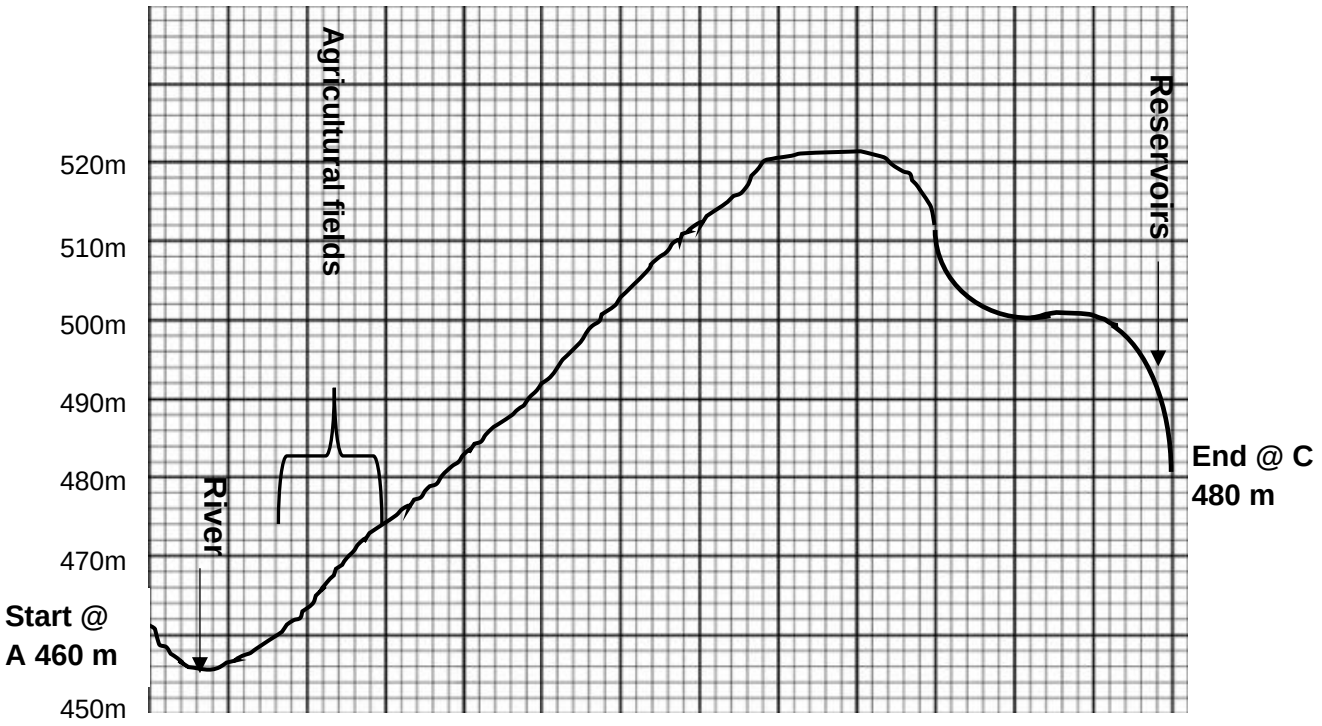
Q1 subtotal

QUESTION 2 TECHNIQUES, ECONOMIC ACTIVITY, URBAN SETTLEMENTS and CLIMATE

2.1 Study the topographic map extract, Map 1.

An incomplete cross-section from A to C on Map 1 has been drawn on the graph paper below. A vertical scale of roughly 1 cm : 10 m has been provided.

Figure 2 – Incomplete cross-section from A to C



Now do the following:

2.1.1 Complete the cross-section.
1 mark for a general upward shape
1 mark for a general up and down shape

2.1.2 Indicate the correct start height and position.
Height could be between 440–460. 1 mark for height and 1 for position

2.1.3 Indicate the correct positions of the following on the cross-section:
- agricultural fields (needed to show an approximate area)
- Lepelle River (this should have been near the beginning of the cs)
- the reservoir (this should be near the end if the cs)

2.1.4 Determine the vertical scale of the cross-section as a ratio.

1 : **1000**

Calculations:

1 cm = 10 m therefore 10 m has 1000 cm

NO method marks

2.1.5 Calculate the vertical exaggeration of this cross-section.

50 times

Calculations:

1: 50000 / 1: 1000 = 50 times

NO method marks

2.2 Three positions (marked 1-3 in red) have been identified on topographic map extract, Map 2. Match the following photographs with these positions.

	Photographs	Position (indicate with a number only)
2.2.1	**Photograph 2** 	2 (or E15)
2.2.2	**Photograph 3** 	3 (or F15)
2.2.3	**Photograph 4** 	1 (or E14)

[Source: Examiner]

2.3 Study photographs 5, 6 and 7 below and answer the questions below.

Photograph 5 – Farming outside Hoedspruit

[Source: <http://www.unifrutti.co.za/farms>]

Photograph 6 – Orchard farming

Photograph 7 – Fruit farmed

[Source: Examiner]

2.3.1 Choose the type of farming this will be classified under.

Commercial	**X**
Subsistence	

2.3.2 Circle FOUR words from the options in the box below that best describe this farming activity.

large scale	pastoral	sugarcane	labour intensive
citrus	mechanised	small scale	arable

If 5 are circled and 3 are correct – max 3 marks.
If 5 are circled and all 5 are correct – max 4.

2.4 This area falls just east of the 500 mm isohyet.

2.4.1 Define the term *isohyet*.

Line joining places of equal rainfall

2.4.2 This means that the area receives ***more*** **/ *less*** than 500 mm of rain. Circle the correct option.

2.5 Discuss, using any evidence from the maps provided, TWO factors that favour agriculture in this area.

- **Flat land (some farmland visible on floodplain).**
- **Land seems fertile by the orchards visible/well drained soils.**
- **River is close by to supply some water.**
- **Good land reform practices enabling agriculture to thrive.**
- **Location map shows area gets more than 500 mm of rain, tropical in nature so rainfall is seasonal.**
- **Dwellings on the map indicate that people staying there can provide needed labour.**
- **Town of Hoedspruit is close by for a market.**
- **Transport infrastructure visible for farmers.**

2.6 Refer to Photograph 6 on the previous page. Provide ONE climatological reason for the rows of trees between the orchards.

Trees provide protection for the orchards from prevailing winds/windbreak.

2.7 Study Photograph 8 taken close to the caravan park (E15).

Photograph 8 – Litter and wildlife

[Source: Examiner]

Litter in the top right-hand corner of Photograph 8 is found on the road close to the caravan park in E15. This warthog from a nearby game reserve was tearing bags open looking for food.

2.7.1 Comment on the suitability of the location of the refuse dump in E15.

Suitable as dumps are generally on the outskirts of town.

It is a designated area away from residences for people to dump refuse.

If NOT SUITABLE, reason given could be that it is too close, personal opinion.

Litter lying around means that animals close by have "access" to it.
Litter may get into rivers close by and pollute it.

2.7.2 Give ONE problem this litter will present to the local caravan park (E15) and the surrounding game farms.

Unsightly.

Smelly.

Litter could get blown around by wind or "moved" elsewhere by animals as evident in the picture. Litter attracts animals.

Waste pickers or vagrants could scavenge the area leading to possible crime.

Refuse may lead to groundwater being polluted.

Q2 subtotal

QUESTION 3 ECONOMIC ACTIVITY, RURAL SETTLEMENT, and CLIMATE

3.1 Study the fact file below, adapted from a *Farmer's Weekly* article.

Fact file – Hoedspruit (Marulaneng) land claim: coming to fruition

- It came as a shock to most Marulaneng farmers when a land claim was gazetted on the entire district of over 500 agricultural properties, the town and the air force base.
- Most farms between the Molatse (Blyde) River Canyon and Kruger Park produce high-value exports, with a combined turnover of about R1 billion. Some farms export mangoes to the UK's Marks & Spencer.
- Many feared the farms would go the same way as other collapsed land reform projects in the region, with a devastating impact on the entire district's economy, which largely depends on agriculture and downstream processing despite a growth in tourism and lifestyle and wildlife/eco estates and lodges.
- Most farmers believe the land claim, lodged by the Moletele community and gazetted in October 2004, is inflated. The Moletele people insist they were dispossessed of a range of traditional land rights over the entire area.

[Source: <https://www.farmersweekly.co.za/hoedspruit-land-claim-coming-to-fruition>]

3.1.1 The social issue referred to in this article is land restitution. Explain the concept of *land restitution*.

- **This is the return/restoration of ancestral land to its original owners. Land restitution involves compensating those who lost land during the apartheid era.**
- **People who were dispossessed of their rights to land may claim restitution from the state. Where claims are legitimate, the claimant is given either state-owned land OR monetary compensation.**

3.1.2 Using information from the fact file, give ONE concern the landowners had with regard to the land restitution.

- **Farmers were concerned the land would be wasted and food security would be put at risk.**
- **They were worried about a devastating impact on the entire district's economy, which largely depends on agriculture and downstream processing.**
- **Farmers feared the farms would go the same way as the other collapsed LR projects.**
- **Farmers were concerned the land claims were inflated.**

3.1.3 The fact file refers to the growth in the number of lifestyle and wildlife/eco estates and lodges in the area. There are some blocks where these are already visible. Circle the references of THREE of these blocks.

F15	D16	E16	E13	D12	F12

3.1.4 People moving into the lifestyle and wildlife/eco estates have seen an increase in the population of Hoedspruit. This is known as (a/an) …

post-modern city	
edge city	
new town	
new ruralism	**X**

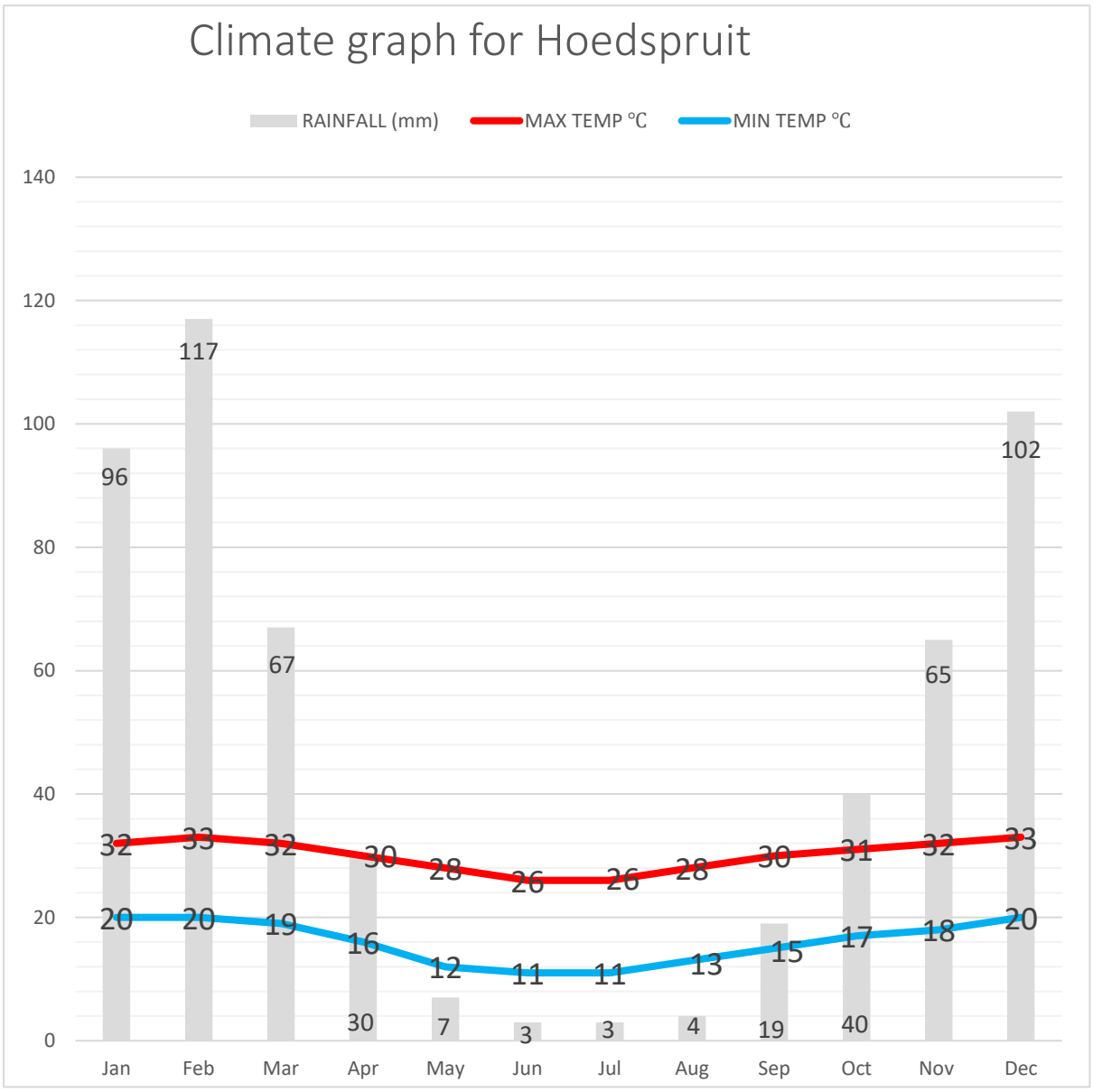
3.2 Two different temperatures were recorded on a winter's night in and around Hoedspruit.

Complete the table below by providing valid reasons (climate and map-based evidence) for these temperature differences.

Feature	**Temperature**	**Reason for temperature**
The Hoedspruit Hotel (E15)	11 °C	**Slightly more built-up area with more artificial surfaces retaining atmospheric heat. The activity in the centre of Hoedspruit also generates heat. Artificial heating (being winter) may create a UHI effect**
Parma Farm (F12)	9 °C	**This area is on the outskirts of town and therefore heat is not retained as much as it is mostly natural surfaces like vegetation. Much less activity than the built-up areas.**

3.3 Study the climate data provided in the graph below.

Figure 3 – Climate graph for Hoedspruit



3.3.1 Calculate the annual rainfall for Hoedspruit.

553 mm

Calculations: **NO method marks here**

3.3.2 This area has been classified as having a tropical climate. Using the data from the climate graph in Question 3.3, create a tweet from the local Hoedspruit meteorologist about the expected weather conditions for a typical December day. Your tweet should include:

- maximum temperature expected
- minimum temperature expected
- any possible precipitation expected
- any other expected general atmospheric conditions

#todaysweather **Dec's daytime max temps can be expected to reach 33°C (anything above 30 accepted) while the low is a balmy 20°C (anything between 18–20 accepted). There are chances of afternoon thunderstorm activity which could lead to heavy rainfall (reference to precipitation) Prepare for the humidity of a tropical climate! OTHER conditions could be windy, hailing, low pressure, cloudy skies, unstable**

Q3 subtotal

Total: 100 marks