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## EASTERN CAPE

## EDUCATION

## NATIONAL SENIOR CERTIFICATE

## GRADE 12

SEPTEMBER 2020

## GEOGRAPHY P2

MARKS: 75

TIME: $\quad 1122$ hours

NAME:

|  |  | MARKS | HOD | CLUSTER | PROVINCIAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Q1 | 15 |  |  |  |  |
| Q2 | 20 |  |  |  |  |
| Q3 | 25 |  |  |  |  |
| Q4 | 15 |  |  |  |  |


| TOTAL <br> MARKS | MOD. |
| :---: | :---: |
|  |  |
| 75 | 75 |

This question paper consists of 15 pages, including 1 page for rough work and calculations.

## RESOURCE MATERIAL

1. An extract from topographical map 3319 CB WORCESTER.
2. Orthophoto map 3319 CB 15 WORCESTER.
3. NOTE: The resource material must be collected by schools for their own use.

## INSTRUCTIONS AND INFORMATION

1. Write your NAME in the space provided on the cover page.
2. Answer ALL the questions in the spaces provided in this question paper.
3. You are provided with a 1:50000 topographical map (3319CB WORCESTER) and an orthophoto map ( 3319 CB 15 WORCESTER) of a part of the mapped area.
4. You must hand the topographical map and the orthophoto map to the invigilator at the end of this examination session.
5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.
6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.
7. Indicate the unit of measurement in the final answer of calculations, e.g. $10 \mathrm{~km} ; 2,1 \mathrm{~cm}$.
8. You may use a non-programmable calculator and a magnifying glass.
9. The area demarcated in BLACK AND RED on the topographical map represents the area covered by the orthophoto map.
10. The following English terms and their Afrikaans translations are shown on the topographical map:

| ENGLISH | AFRIKAANS |
| :--- | :--- |
| Aerodrome | Vliegveld |
| Golf course | Gholfbaan |
| Model aircraft club | Modelvlietuigklub |
| Hospital | Hospitaal |
| Sewerage works | Rioolwerke |
| Race track | Renbaan |
| Canal | Kanaal |
| Cemetery | Begraafplaas |
| Wine cellar | Wynkelder |
| Horse riding club | Perdryklub |
| Brickworks | Steenwerke |

## GENERAL INFORMATION ON WORCESTER

Worcester is a gap town in the Western Cape, South Africa. It is located 120 kilometres north-east of Cape Town on the N1 highway through the Huguenot Tunnel or by driving through spectacular mountain passes north to Johannesburg.
Worcester experiences more extremes of temperature than neighbouring Cape Town, as oceanic influences are blocked by the Du Toitskloof and Slanghoek mountain ranges to the west. Summer is generally dry with the rare late summer thunderstorm. Winters are generally very windy and often cool to cold with snow being common on the higher lying ground above 1500 m . Daytime maximums range from $10^{\circ} \mathrm{C}-17^{\circ} \mathrm{C}$, with minimums hovering at or just above freezing. Winter brings most of Worcester's 175 mm of annual rainfall.


Coordinates: $33^{\circ} 38^{\prime \prime} 42^{\prime} \mathrm{S} 19^{\circ} 26^{\prime \prime} 37^{\prime E}$

## QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1:50 000 topographical map (3319 CB WORCESTER) as well as the orthophoto map of the part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A-D) in the block next to each question.
1.1 The map index to sheet of the orthophoto map north of Worcester is ...

A 3319 CB 9.
B $\quad 3319$ DA 6 .
C $\quad 3319$ CB 10.
D $\quad 3319$ CB 20.
$\square$
1.2 The primary activity found at $\mathbf{1}$ on the orthophoto map is/an ...

A orchards and vineyards.
B mining.
C cultivated lands.
D quarry.
1.3 The building at $\mathbf{2}$ on the orthophoto map is a ...

A shop.
B hospital.
C school. $\square$
D factory.
1.4 The type of road labelled 3 on the orthophoto map is $\mathrm{a} / \mathrm{an} \ldots$ road.

A other
B main
C secondary
D arterial
1.5 The feature found at 4 on the orthophoto map is a ...

A monument.
B golf course.
C cemetery.
D stadium.
1.6 The mean annual change on the topographical map is ...

A 2' Eastwards.
B $23^{\circ} 12^{\prime}$ West.
C 2' Westwards.
D $23^{\circ} 12^{\prime}$ East.
1.7 The feature found at $33^{\circ} 39^{\prime} 45^{\prime \prime}$ S and $19^{\circ} 25^{\prime} 45^{\prime \prime}$ E on the topographical map is a ...

A race track.
B caravan park.
C horse riding club.
D model aircraft club.
1.8 The fluvial landform along the Breë River in block E6 on the topographical map is a ...

A waterfall.
B rejuvenation.
C rapid.
D braided stream.
1.9 The sewerage works found in block D8 is located in the ...

A industrial zone.
B residential zone.
C rural-urban fringe. $\square$
D commercial zone.
1.10 The dominant drainage pattern in block E8 on the topographical map is ...

A radial.
B centripetal.
C trellis.
D parallel.
1.11 The main street plan at $\mathbf{K}$ in block $\mathbf{C 7}$ on the topographical map is a/an ... pattern.

A radial
B unplanned irregular
C gridiron
D planned irregular
1.12 The true bearing of bench mark 214,8 in block C3 from spot height 471, (L), in block A4 on the topographical map is ...

A $\quad 16^{\circ}$.
B $\quad 216^{\circ}$.
C $\quad 46^{\circ}$.
D $164^{\circ}$.
1.13 A human factor responsible for the location of the industrial area at 5 on the orthophoto map is ...

A stable ground.
B climate.
C transport.
D CBD.
1.14 The brickworks in block A1 on the topographical map is an example of a ... activity.

A quaternary
B tertiary
C primary
D secondary
1.15 The landform at $\mathbf{M}$ in block $\mathbf{G 8}$ on the topographical map is a...

A saddle.
B spur.
C koppie.
D valley.

## QUESTION 2: MAPWORK CALCULATIONS AND TECHNIQUES

2.1 The magnetic declination in 2020 for the topographical map is $23^{\circ} 58^{\prime} \mathrm{W}$ of TN.
2.1.1 Will the declination become larger or smaller from the time it was surveyed?
$(1 \times 1)$
2.1. 2 Give a reason for your answer to QUESTION 2.1.1.
$\qquad$
$\qquad$
2.2 Refer to the line from $\mathbf{N}$ (block E3) to $\mathbf{O}$ (block $\mathbf{C}$ ) on the topographical map.
2.2.1 Complete a cross section from trigonometric station 59 (E3) to trigonometric station 207 (C6). Use the vertical interval of $1 \mathrm{~cm}=20 \mathrm{~m}$.

$(3 \times 1)$
(3)
2.2.2 Indicate the position of the following on the cross section drawn in QUESTION 2.2.1:

- Secondary road (see graph)
- Rifle range
- Breë River
2.2.3 Calculate the vertical exaggeration of the cross-section. Show ALL calculations. Marks will be awarded for calculations.

Formula: Vertical exaggeration $=\frac{\text { Vertical Scale }}{\text { Horizontal Scale }}$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$(4 \times 1)$
2.2.4 Would the vertical exaggeration of the cross-section make the interpretation of the landscape easier or difficulty?
Give a reason for your answer.
Answer:
(1 x 1 )
(1)

Reason: $\qquad$
$\qquad$
$\qquad$
2.3 Refer to area 6 on the orthophoto map.
2.3.1 Calculate the area of the railway shed 6 on the orthophoto map, in $\mathrm{km}^{2}$. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your answer.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
(5 x 1)
2.3.2 The area 6 on the orthophoto map is the same as the area of railway shed $\mathbf{P}$ on the topographical map. Explain why it appears to be smaller on the topographical map.
$\qquad$
$\qquad$
$\qquad$

## QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to the area in blocks $\mathbf{A 6}$ to $\mathbf{B 8}$ on the topographical map.
3.1.1 Name the nocturnal (night) wind that occurs between $\mathbf{X}$ and $\mathbf{Y}$.
$\qquad$
$(1 \times 1)$ (1)
3.1.2 On the cross-section below, indicate the following:
(a) Wind direction of the wind named in QUESTION 3.1.1
(b) Position of Altona

$(2 \times 1)(2)$
3.1.3 Explain how frost will influence the type of crops farmed at Altona.
$\qquad$
$\qquad$
$\qquad$
3.2 Refer to blocks D4 and E5 on the topographical map.
3.2.1 Name ONE landform of fluvial deposition in blocks D4 and E5.
$(1 \times 1)$
3.2.2 Is laminar or turbulent river flow found in blocks D4 and E5? Motivate using evidence to support answer.

Answer:
Evidence: $\qquad$
$\qquad$

$$
\begin{equation*}
(1+1 \times 2) \tag{3}
\end{equation*}
$$

3.3 Worcester enjoys an excellent location as a gap town. With reference to this statement:
3.3.1 Explain the meaning of the term gap town.
$\qquad$
$\qquad$
3.3.2 Give TWO map evidences to support the statement that Worcester is a gap town.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
(2 x 2)
3.4 Refer to 7 on the orthophoto map.
3.4.1 Is the residential area 7 a high- or low-income residential area? Give a reason for your answer.

Answer: $\qquad$
Reason: $\qquad$
$\qquad$
$\qquad$
3.5 Refer to the area demarcated with a white line in the north-east corner on the orthophoto map.
3.5.1 Is the wine cellar / factory at 8 on the orthophoto map marketorientated or raw material-orientated? Give a reason for your answer.

Answer: $\qquad$
Reason: $\qquad$
$\qquad$
(1+1×2)
3.5.2 Suggest how the wine cellar / factory in QUESTION 3.5.1 can improve the local economy of Worcester.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
(2 x 2) (4)
[25]

## QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 During a major flooding disaster, accessibility to the Brandvlei Dam in blocks E6 and F6 on topographical map, would be limited. To determine the extent of the damage, remote sensing could be a useful tool.
4.1.1 Give an example of a remote sensing device that can be used to capture the extent of the damage due to flooding.
$\qquad$
4.1.2 Explain how remote sensing could assist in monitoring the environmental impact of flooding in the area.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
4.2 A farmer decides to use data manipulation on his farm situated in blocks G9 and 10.
4.2.1 Explain the term data manipulation.
$\qquad$
$\qquad$
4.2.2 Evaluate how data manipulation assists farmers in blocks G9 and 10 to practise sustainable farming methods.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$(2 \times 2)$
4.3 The sketch map below is a plan view of the Aan de Doons settlement and its attribute data, located in block F10 and G10.

4.3.1 Define the term attribute data.
$\qquad$
$\qquad$
4.3.2 Use the symbols (letters of the alphabet) shown in the key below to locate the position of the following attribute data for the Aan de Doons settlement on the sketch map.

A - Cellar
B - School
4.3.3 State TWO attributes of B - School in QUESTION 4.3.2.

## ROUGH WORK-AND CALCULATIONS

(NOTE: Do not remove this page from the question paper.)

