NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2018

GEOGRAPHY P2

MARKS: 75

TIME: 1½ hours

NAME: _____

		MARKS	HOD	CLUSTER	PROVINCIAL
Q1	**15**				
Q2	**20**				
Q3	**25**				
Q4	**15**				

TOTAL MARKS	MOD.
75	**75**

This question paper consists of 17 pages, including a page
for rough work and calculations.

RESOURCE MATERIAL

1. An extract from topographic map 2926AB MASELSPOORT.

2. Orthophoto map 2926 AB 6 MASELSPOORT.

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your NAME and SURNAME in the space provided on the cover page.

2. Answer ALL the questions in the spaces provided on this question paper.

3. You are provided with a 1 : 50 000 topographic map (2926AB MASELSPOORT) and an orthophoto map (2926 AB 6 MASELSPOORT) of a part of the mapped area.

4. You must hand in the topographic map and the orthophoto map to the invigilator at the end of this examination session.

5. You must use the blank page at the back of this 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 awarded for these.

7. Indicate the unit of measurement in the final answer of calculations. Ensure that units are maintained throughout ALL your calculations and final answer.

8. You may use a non-programmable calculator and a magnifying glass.

9. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

10. A glossary of some of the English words and their Afrikaans translations appears below.

ENGLISH	AFRIKAANS
Landing strip	Landingstrook/Aanloopbaan
Furrow	Voor
Caravan Park	Karavaanpark
Canal	Kanaal
Sewerage works	Rioolwerke
Golf Course	Gholfbaan
Excavation	Uitgrawing
Nature reserve	Natuurreservaat
Rifle Range	Skietbaan
Aerodrome	Vliegveld
Communication tower	Kommunikasietoring

GENERAL INFORMATION ON MASELSPOORT

Maselspoort is a town in Mangaung, in the Free State province, South Africa. Maselspoort is situated on the banks of the Modder River, 23 km from Bloemfontein. Maselspoort normally receives about 540 mm rain per year, with most rainfall occurring mainly during mid-summer. Mesas, buttes and conical hills surround the landscape. It is a popular resort town for Bloemfontein since the 1930's. A fisherman's paradise, Maselspoort offers a choice of leisure facilities.
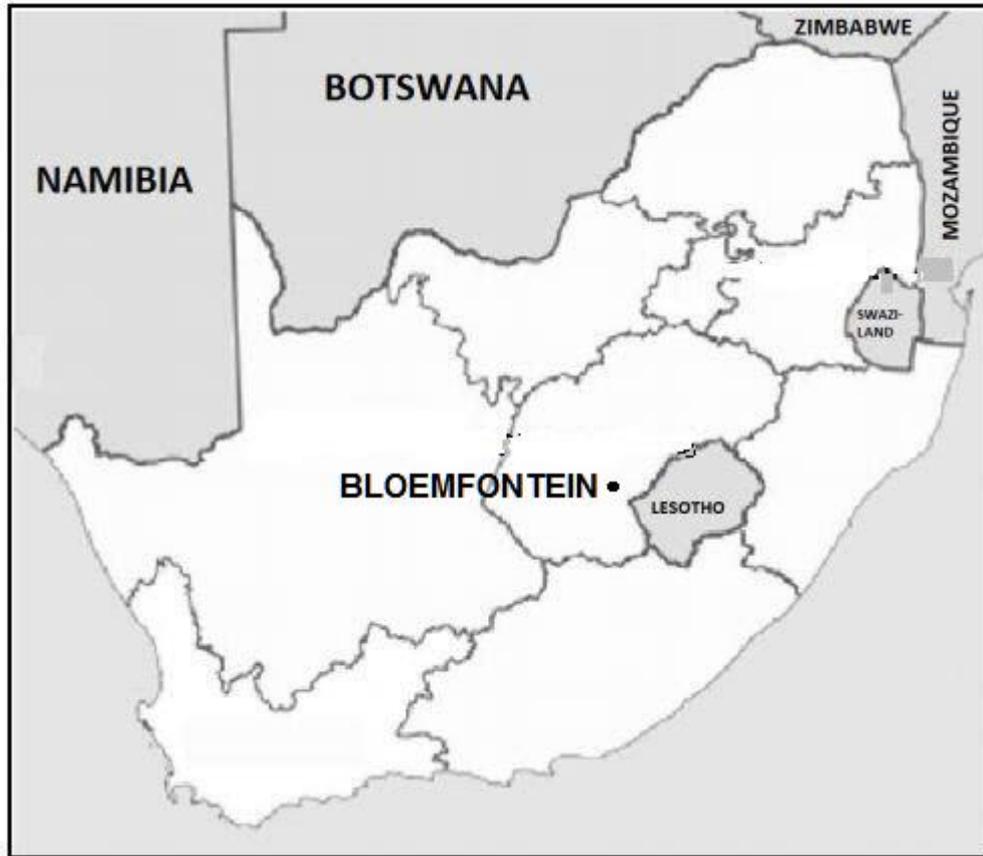
Coordinates: 29°01'40" S 26°24'11" E / 29°01,6' S 26°24,1' E.

[Adapted from https://en.m.wikipedia.org]

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (2926AB MASELSPOORT), as well as the orthophoto map (2926AB 6 MASELSPOORT) of a 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/reference of the topographic map to the south-east of Maselpoort is …

       A   2926 AC.
       B   2926 AD.
       C   2926 BC.
       D   2826 DC.

1.2   Ground water is used around Maselspoort for agricultural purposes. One piece of evidence to prove the use of ground water is the presence of ...

       A   windpumps.
       B   dams.
       C   rivers.
       D   taps.

1.3   The railway line (block **A5)** passes through a …

       A   saddle.
       B   ravine.
       C   gap.
       D   gorge.

1.4   The direction of flow of the Bloemspruit/Bloem River in block **H3** is …

       A   south.
       B   east-northeast.
       C   north-east.
       D   south-northwest.

1.5   The contour interval on the orthophoto map is ... metres.

       A   5
       B   10
       C   15
       D   20

1.6   The landform labelled **B** (block **C2**) on the topographic map is a …

    A   plateau.
    B   cuesta.
    C   mesa.
    D   conical hill.

1.7   The approximate time the orthophoto was taken would be …

    A   between 08:00–10:00
    B   between 11:00–13:00
    C   between 14:00–17:00
    D   between 17:00–19:00

1.8   The feature labelled **C** in block **F3** is a …

    A   windpump.
    B   communication tower.
    C   grave.
    D   monument.

1.9   The human-made feature at **1** on the orthophoto map is a …

    A   school.
    B   cemetery.
    C   golf course.
    D   hospital.

1.10   The landform between **9** and **10** on the orthophoto map is a …

    A   gap.
    B   spur.
    C   gorge.
    D   valley.

1.11   The location (co-ordinates) of the De Bloem station labelled **D** (block **E1**) is …

    A   29°05'00"S 26°02'12"E / 29°05,0'S 26°02,2'E.
    B   26°15'52"E 29°04'45"S / 26°15,9'E 29°04,8'S.
    C   29°04'45"E 26°28'36"S / 29°04,8'E 26°28,6'S.
    D   29°04'45"S 26°15'52"E / 29°04,8'S 26°15,9'E.

1.12   The true bearing of spot height 1402 in block **D2** from trigonometrical station 171 in block **F5** is …

    A   129°.
    B   309°.
    C   38°.
    D   116°.

1.13   The scale of the orthophoto map is … than that of the topographic map.

       A   5 times smaller
       B   5 times larger
       C   40 times larger
       D   40 times smaller

1.14   Maselspoort is … from Bloemfontein.

       A   5 km
       B   13 km
       C   23 km
       D   40 km
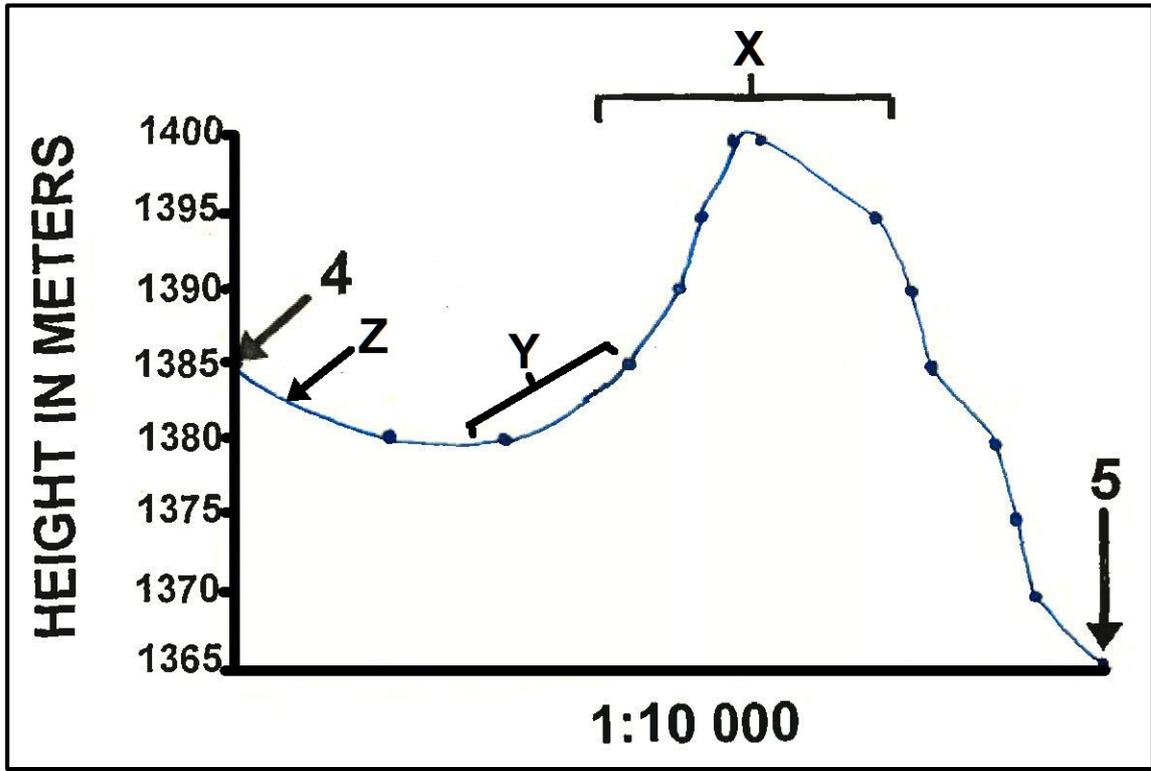
1.15   The railway line labelled **F** on the topographic map from De Bloem station **D**
       (block **E1**) to Glen passes under … bridges.

       A   0
       B   1
       C   2
       D   3

(15 x 1) (15)
[15]

QUESTION 2: MAPWORK CALCULATIONS AND TECHNIQUES

2.1   Refer to the cross-section below from **4** to **5** on the orthophoto map and
       answer the questions that follow. The vertical scale for the cross-section is
       1 cm represents 5 m.

[Source: Examiner's extract]

2.1.1   Name the landform **X** on the cross-section above.

_____

(1 x 1)   (1)

2.1.2   (a)   Identify the slope type labelled **Y** on the cross-section above.

_____

(1 x 1)   (1)

(b)   Refer to orthophoto map evidence to motivate your answer to
       QUESTION 2.1.2 (a).

_____

_____

(1 x 1)   (1)

2.1.3   (a)   Name the man-made feature **Z** between points **4** and **5**.

                                                                  (1 x 1)   (1)

        (b)   The height at which the feature identified in QUESTION 2.1.3 (a) is located/found ...

                                                                  (1 x 1)   (1)

2.1.4   Calculate the vertical exaggeration of the cross-section. Show ALL calculations. Marks will be awarded for calculations.

       Formula: VE = Vertical scale / Horizontal scale

                                                                  (4 x 1)   (4)

2.2   Refer to the area demarcated in RED on the topographic map, which represents the area covered by the orthophoto map.

    2.2.1   Calculate the above area in km^2. Show ALL calculations. Marks will be awarded for calculations.

        Formula: **Area = Length x Breadth**

                                                                  (5 x 1)   (5)

    2.2.2   What would the area be in metres?

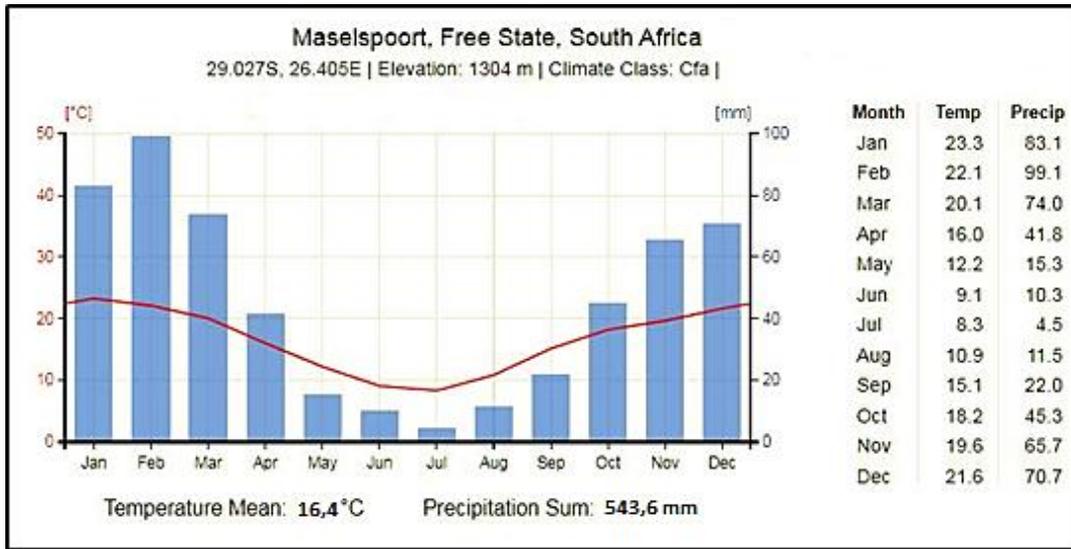   (1 x 1)   (1)

                                                                      Please turn over

2.3   Calculate the average gradient between the trigonometric station **11** (1428) to
       spot height **12** (1409) on the orthophoto map.
       Show ALL calculations. Marks will be awarded for calculations.

_____

_____

_____

_____

_____

_____

_____

                                                           (5 x 1)   (5)
                                                                       [20]

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to the graph below, the information on page 2 and the topographic map to answer the questions that follow.

Maselspoort, Free State, South Africa
29.027S, 26.405E | Elevation: 1304 m | Climate Class: Cfa |

Month	Temp	Precip
Jan	23.3	83.1
Feb	22.1	99.1
Mar	20.1	74.0
Apr	16.0	41.8
May	12.2	15.3
Jun	9.1	10.3
Jul	8.3	4.5
Aug	10.9	11.5
Sep	15.1	22.0
Oct	18.2	45.3
Nov	19.6	65.7
Dec	21.6	70.7

Temperature Mean: 16,4°C   Precipitation Sum: 543,6 mm

3.1.1 Does Maselspoort receive *summer* or *winter* rainfall?

(1 x 1)   (1)

3.1.2 Give TWO points of evidence from the graph to support your answer to QUESTION 3.1.1.

1.

2.

(2 x 1)   (2)

3.2 Refer to number **3** on the orthophoto map. Study it together with the topographic map and answer the questions that follow.

3.2.1 Identify any ONE type of mass wasting that could possibly affect the small farming settlements at the base of Olive Hill at **8** on the orthophoto map.

(1 x 1)   (1)

3.2.2 Explain the negative impact of mass wasting identified in QUESTION 3.2.1 on the surrounding farming community.

_____

_____

_____

_____

(2 x 2)   (4)

3.3 Study the photograph of the Maselspoort Resort (block **B10**) along the side of the Modder River and answer the following questions.

[Source: Google earth]

3.3.1 Is this a *high oblique* or a *low oblique* photograph?

_____

(1 x 1)   (1)

3.3.2 (a)   In what direction do you think the camera is pointing?

_____

(1 x 1)   (1)

(b)   Give a reason for the answer to QUESTION 3.3.2 (a).

_____

(1 x 1)   (1)

3.3.3 Identify the feature at **X**.

_____

(1 x 1)   (1)

3.3.4 Refer to the topographic map in block **B10**.

(a) What direction is the Modder River flowing?

(1 x 1) (1)

(b) Provide TWO reasons evident from the photograph and topographic map to support your answer to QUESTION 3.3.4 (a).

(2 x 2) (4)

3.4 Maselspoort generally receives low rainfall. Mention ONE measure evident on the topographic map that farmers have adopted to overcome water shortages.

3.4.1

(1 x 1) (1)

3.4.2 Identify the environmental problem labelled **H** (block **C6**).

(1 x 1) (1)

3.4.3 Explain any TWO management strategies to prevent and control the environmental problem identified in QUESTION 3.4.2.

(2 x 2) (4)

3.5 Refer to blocks **D6/7** on the topographic map.

   (a) Identify feature **G.**

   _____

   (1 x 1)   (1)

   (b) What method is used to bring water to this area?

   _____

   (1 x 1)   (1)
   [25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1   State THREE processes when working with GIS.

_____

_____

_____

(3 x 1)   (3)

4.2   Classify the following data as *spatial data* **or** *attribute data*.
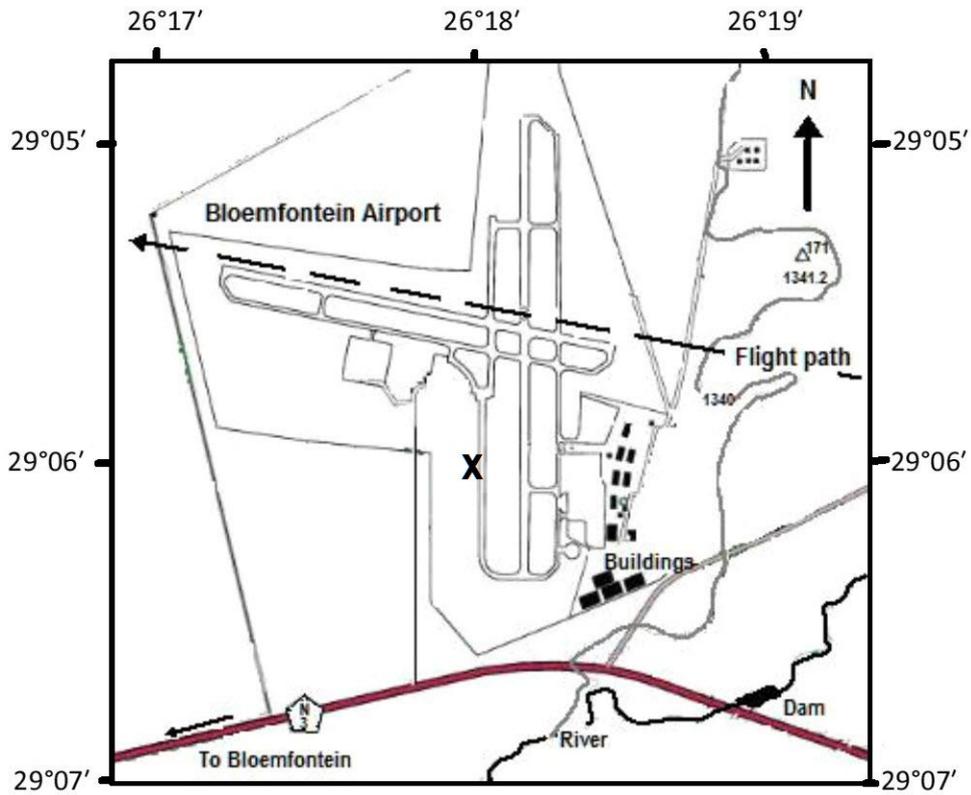
4.2.1   A map showing lay-out of residential area.

_____

(1 x 1)   (1)

4.2.2   The shape of a marsh and vlei.

_____

(1 x 1)   (1)

4.3   Study the map extract below from the topographic map (blocks **F3/4** and **G3/4**), which is not drawn to scale.

[Source: topographic map extract Maselspoort]

4.3.1   (a)   Is the topographic map extract a *vector* or *raster* map?

                                                  (1 x 1)   (1)

         (b)   Give ONE reason for your answer to QUESTION 4.3.1 (a).

                                                  (1 x 1)   (1)

4.3.2   Classify each of the following spatial objects from the topographic map extract:

         (a)   Dam –

         (b)   Trignometric station 171 –

                                                    (2 x 1)   (2)

4.3.3   State the spatial referencing data for the airport marked **X** on the topographic map extract.

                                                  (2 x 1)   (2)

4.4   Differentiate between *spatial resolution* and *spectral resolution*.

Spatial resolution: _____

_____

_____
                                                    (1 x 1)   (1)

Spectral resolution: _____

_____

_____
                                                    (1 x 1)   (1)

4.5   Explain in what situation a person would use a high resolution.

_____

_____

_____

_____
                                                    (1 x 2)   (2)
                                                              [15]

                                        TOTAL: 75

ROUGH WORK AND CALCULATIONS

NOTE: DO NOT remove this page from question paper.