KZN - DEPARTMENT OF EDUCATION

GREENBURY SECONDARY SCHOOL

FINAL EXAMINATION 2016

GEOGRAPHY P2

GRADE: 10   **DATE:** 03/11/16
EXAMINER: D. RAMASAMI   **TIME:** 1.5 HOURS
MODERATOR: R. RANGANATHAN   **MARKS:** 75

NAME:

GRADE/
DIV:

EDUCATOR

QUESTION	CONTENT	MARKS
ONE	Multiple choice questions	15
TWO	Map calculations	20
THREE	Map and photo interpretation	25
FOUR	Geographical Information System	15

MARKS:

75

INSTRUCTIONS AND INFORMATION

1. This paper consists of **NINE** pages inclusive of the cover page.

2. Write your name and your educator's name in the spaces provided on the question paper.

3. Answer ALL the questions in the spaces provided in this question paper. Show all Calculations where required.

4. You should receive a 1:50 000 topographical map 2528 DA CULLINAN (EXTRACT) and an orthophoto map 25 28 DA 16 CULLINAN of a part of the mapped area.

5. The topographical map and the orthophoto map must be handed in to the invigilator at the end of the examination session.

6. You may use the blank page at the back of this question paper for all rough work and calculations.

7. A non-programmable calculator may be used.

8. The orthophoto map covers blocks 10, 11, 12 A and B of the topographic map.

9. The following English terms and/or their Afrikaans translations may appear on the topographical map:

ENGLISH	AFRIKAANS
Caravan park	Karavaanpark
Cemetery	Begraafplaas
Copper mine	Kopermyn
Diggings	Uitgrawings
Disused mine	Ongebruikte myn
Drive-in theatre	Inryteater
Fish farm	Visplaas
Landing strip	Landingstrook
Refuse dump	Afvalstortingsterrein
Rifle range	Skietbaan
River	Rivier
Sewage disposal works	Rioolafvalwerke
Shaft	Skag
Slimes dam	Slykdam

GENERAL INFORMATION ON CULLINAN

Cullinan is situated in the Highveld region of South Africa. The town has an elevation of 1 476 m. The closest city is Pretoria, which is 40 km away, while Johannesburg is 100 km away. On 25 June 1905 the famed Cullinan Diamond, the largest in the world at 3 106 carats (621 g), was discovered by Frederick George Stanley Wells, a surface manager at the Premier Diamond Mining Company. The town of Cullinan owes its existence to diamond mining in the area. Cullinan's opencast mine is among the biggest in the world, three times the size of the more famous Kimberley Diamond Mine.
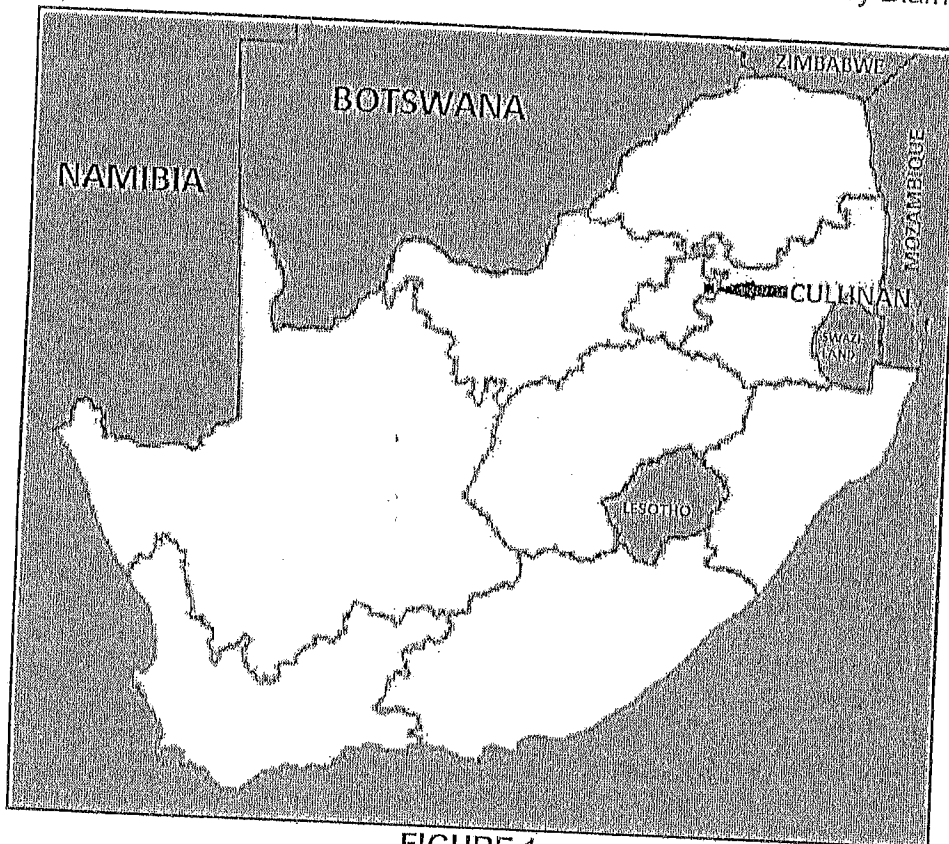

FIGURE 1

QUESTION ONE

MULTIPLE CHOICE QUESTIONS

The following questions are based on the 1:50 000 topographical map, as well as the orthophoto map. Various options are provided as possible answers to the following questions. Write down the letter of the correct answer in the spaces provided..

1.1.   The contour interval of the topographic map map is ...

    A) 5M
    B) 10M
    C) 20M
    D) 15M

1.2.   The map projection used on the topographic map map is ...

    A) Gauss Conform Projection
    B) Lamberts Projection
    C) Mercator
    D) Universal Transverse.

1.3.   The scale of the orthophoto map means that 1 cm on the map represents ..

    A) 0,1 Km
    B) 10 Km
    C) 0,5 Km
    D) 50 Km

1.4.   Land use D on the topographic map is .... of land use R.

    A) SE
    B) NW
    C) NE
    D) N

1.5.   The road exiting Cullinan in the south towards Pretoria is a/an

    A) arterial
    B) main
    C) national
    D) minor

1.6.   The height of the trig beacon in G8 1s

    A) 1540,8 m
    B) 80 m
    C) 1540.8 cm
    D) 80 cm

1.7.   The slope labeled S on the topographic map is …

    A) Gentle
    B) Steep
    C) Vertical
    D) Terraced

1.8.   The feature numbered 10 on the orthophoto map is a/an ..

    A) Soccer field
    B) Sewage work
    C) Dam
    D) Mine

1.9.   The orthophoto map is an example of a/an …

    A) Vertical
    C) Oblique
    C) High oblique
    D) Low oblique

1.10.   The scale of the topographic map is ….than the orthophoto map.

    A) Smaller
    B) larger
    C) Same as
    D) None of the above .

1.11.   The scale used on the orthophoto map is a ….

    A) Ratio scale
    B) Word scale
    C) Linear scale
    D) All of the above

1.12.   The land use F on the topographic map is ….

    A) Crop cultivation
    B) Orchard and vineyards
    C) Forestry
    D) Mining

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1.13.   The orthophoto map is covering a ....of Cullinan compared to the topographic map.

    A)   Smaller
    B)   Larger
    C)   Same
    D)   None of the above

1.14.   The latitudinal position in the reference 2528 is ..

    A)   25° S
    B)   25° E
    C)   28° S
    D)   28° E

1.15.   Cullinan is found in ......

    A)   KZN
    B)   Limpopo
    C)   Western Cape
    D)   Gauteng

(15 x 1)   [15]

QUESTION TWO
MAP CALCULATIONS

2.1.   Calculate the distance in metres between spot height 1452 (F2) and spot height 1406 (C4), on the topographic map.

_____

_____

_____

_____ (3)

2.2.   State the height of M on the topographic map..

_____ (1)

2.3.   State the method used to show height at the following points on the topographic map.
    J _____
    M _____
    R _____ (3)

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2.4.   Calculate the difference in height between M and J

_____.

_____

_____ (3)

2.5.   Calculate the true bearing of X from P on the topographic map

_____ (3)

2.6.   Will the magnetic bearing of the mapped region be greater than or smaller than the true bearing for 2016?

_____ (1)

2.7.   State the grid reference of D on the topographic map. Marks will be allocated for minutes, seconds and direction.

latitude_____

longitude: _____ (6)

[20]

QUESTION 3
MAP AND PHOTO INTERPRETATION

3.1.   State two problems that may be caused by mining in Cullinan.

_____

_____ (2)

3.2.   Refer to the topographic map and orthophoto map and answer the questions that follow:

3.2.1. State two uses of the Dam at S to the residents of Cullinan.

a) _____

b)_____ _____ (2)

3.2.2. Name the famous diamond that was discovered in Cullinan.

_____ (2)

3.2.3. Name the factor that favoured the location of the mines in Cullinan.

_____ (2)

3.3.1. Identify the following land uses/ features on the topographic and orthophoto maps:

6 _____

9 _____

5 _____

N _____

U _____ (10)

3.3.2. State the factor favouring the primary activity in the NE corner of the topographic map.

_____ (2)

3.3.3. Compare the slopes at 7 and 3 on the orthophoto map. Give a reason for each answer.

7 _____

_____ (2)

3 _____

_____ (2)

3.3.4. Name the man made structure Y on the topographic map.

_____ (2)

[25]

QUESTION 4
GEOGRAPHICAL INFORMATION SYSTEM
4.1. Define the concept of GIS

_____ (2)

4.2. Name any two components of GIS.

a) _____

b) _____ (2)

4.3. Give an example of the following types of data from B5 on the topographic map

Line: _____ (1)

Polygon: _____ (1)

4.4.   Differentiate between passive and active remote sensing.

Active: _____

_____   (2)

Passive: _____

_____   (2)

4.5.   State one use of GIS for each of the following: (uses may not be repeated)
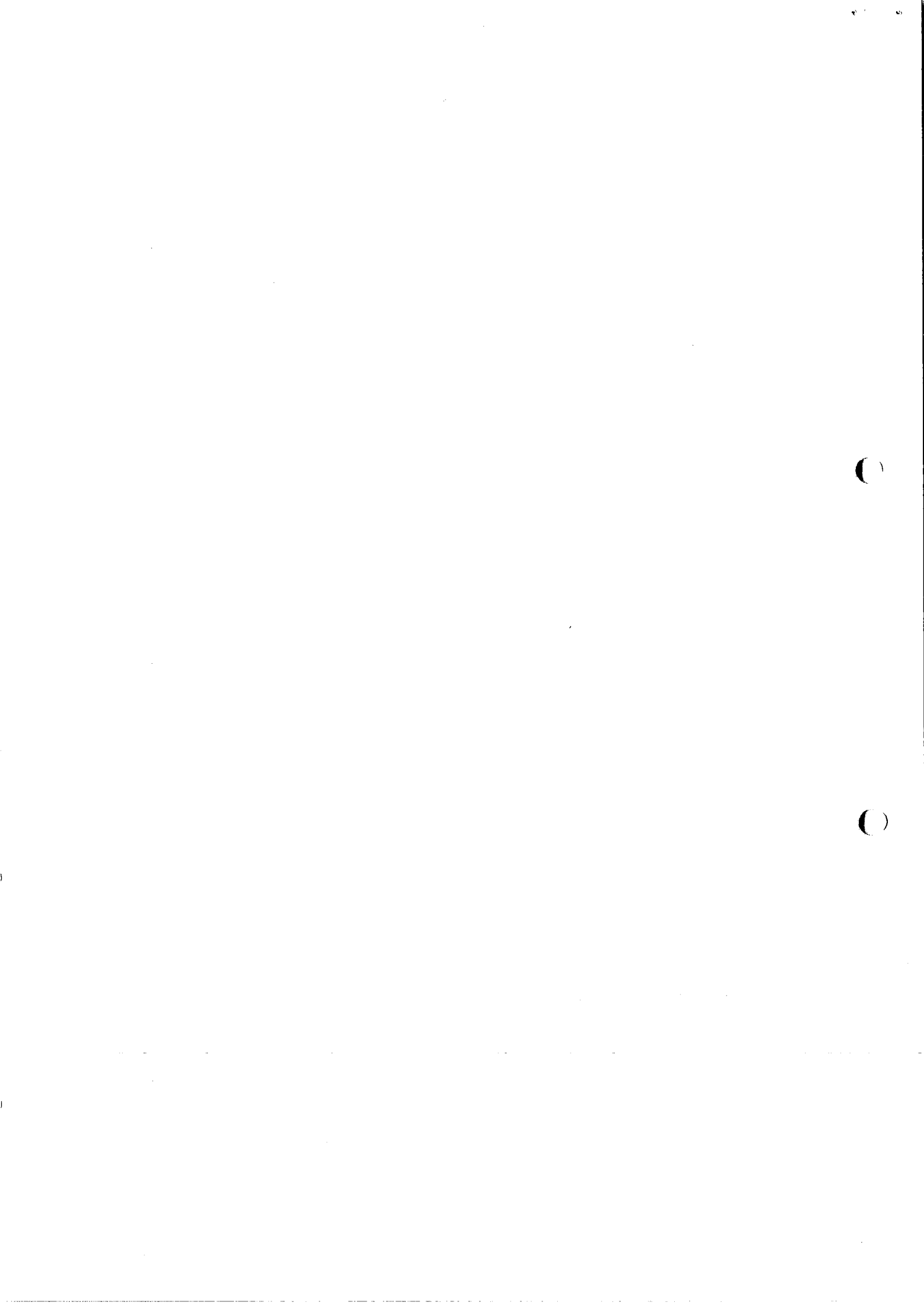
Crime prevention: _____

_____   (2)

Disaster management: _____

_____   (2)

4.6.   State one advantage of GIS over paper maps.

_____

_____   (1)

[15]

TOTAL = 75

ROUGH WORK

GEOG GRADE 10

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QUESTION ONE

1.1.	C √	1.9.	A √
1.2.	A √	1.10.	A √
1.3.	A √	1.11.	A √
1.4.	C √	1.12.	A √
1.5.	B √	1.13.	A √
1.6.	A √	1.14.	A √
1.7.	B √	1.15.	A √
1.8.	D √		

QUESTION TWO

2.1.   Map distance = 15.4 cm √   (15.2 – 15.6)

Ground distance = 15.4/2 √

= 7.7 x 1000 km

=7700 m √   (7600 – 7800)

2.2.   1400 M √

2.3.   J – trig beacon/ trignometrical station √

M – contour line √

R – spot height √

2.4.   1521.7 √ – 1400 √ = 121.7 m √

2.5.   180° + 68° √ = 248° √√   (65° - 71°) = (245° - 251°)

2.6.   greater than √

2.7.   latitude - 25° 39′ √ 13″ √ S √   (8″ – 16″)

Longitude - 28° 36′ √ 46″ E √   (42″ – 49″)

QUESTION THREE

3.1.   Pollution √

Scaring the land √

Destroying vegetation/ deforestation

3.2.1.   Water for domestic/industrial/agricultural use. √

Recreation √

3.2.2.   Cullinan diamond

3.2.3.   Large mineral resources √√

3.3.1.   6 –dam √√

9 – residential/houses √√

5 – saddle √√

N – railway station √√ (not railway line)

U – residential/built up area √√

3.3.2.   flat land √√

3.3.3.   7 – steep √ contours are close together √√

3 – gentle √ contours are far apart √√

3.3.4.   dam wall √√ (not dam)

QUESTION FOUR

4.1.   The use of **computer technology** to study geographical information. √√

4.2.   hardware √, software √, data, user

4.3.   line – road √, river, contour, original farm boundry

Polygon – farm √

4.4.   active – A signal is sent out and the reflection is captured as an image. √√

Passive – The natural radiation of the earth is picked up. √√

4.5.   crime prevention – locate crime hotspots √√, set up road blocks

Disaster management – Track natural phenomenon, study aerial pictures of destruction. √√

(accept any reasonable answer – may not be repeated)

4.6.   Gis lasts longer√, faster, stores more information (accept any reasonable answer)