MAPWORK SKILLS & CALCULATIONS

Check List

Make sure you...

- Are familiar with:
  - Topographic map referencing system & conventional symbols
  - Scale & distance
  - Area
  - Compass directions
  - Relative position: bearing
  - Grid references & exact position
  - Contour lines and landforms
  - Gradient
  - Cross-sections
  - Vertical Exaggeration

Exam Questions

Question 1

The questions below are based on the 1:50 000 topographical map 2829AC HARRISMITH, as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the correct answer and write down only the letter (A-D)

1.1   The map index to the north of Harrismith is …

A   2829CA.

B   2829AA.

C   2829AD.

D   2829AB.

1.2   The map projection used to draw the 1:50 000 topographical map of Harrismith is … projection.

A   Mercator.

B   Robinsons.

C   Gauss conformal.

D   Lamberts.
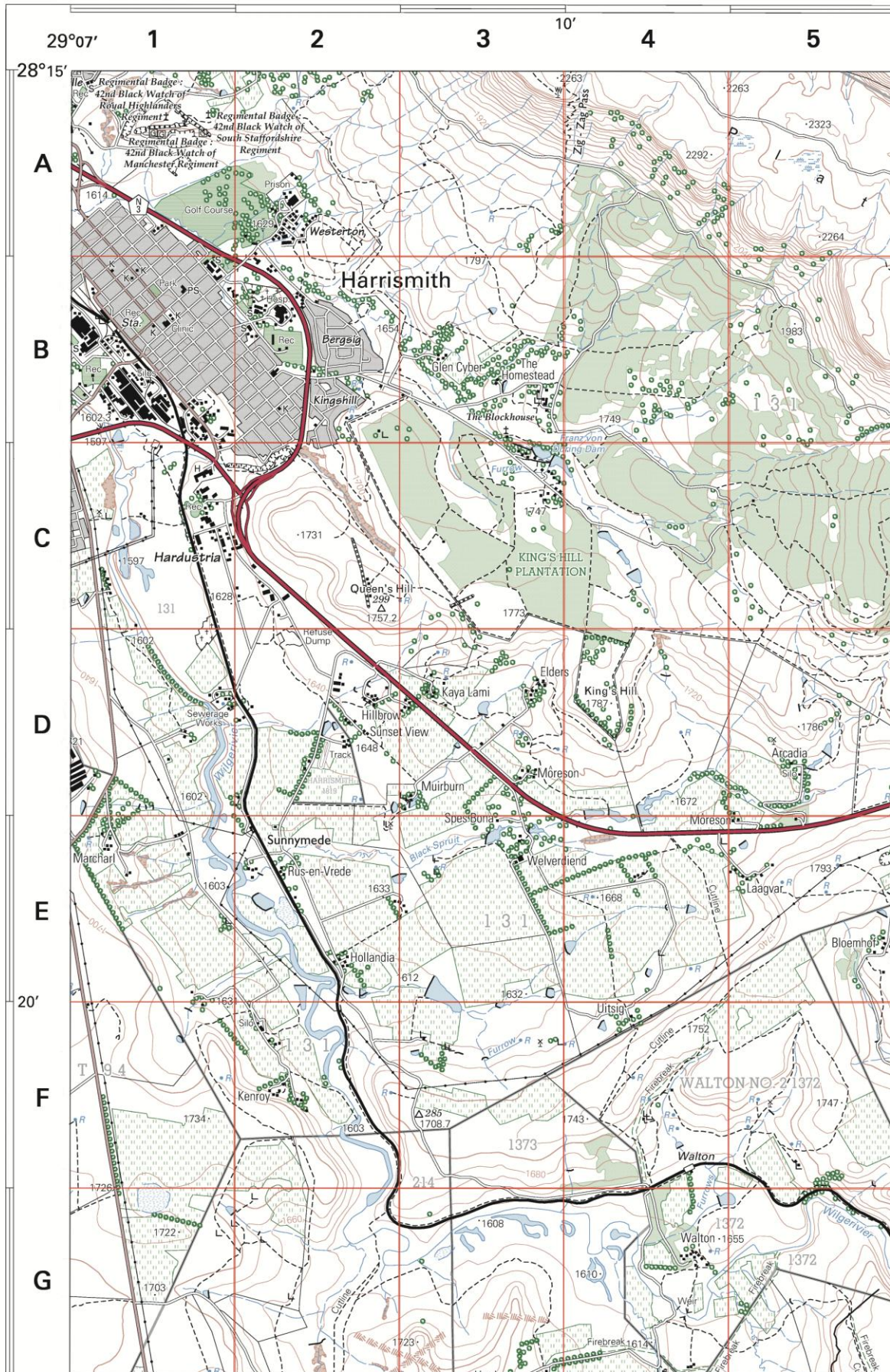
1.3   The red road that passes through the town of Harrismith to Durban is an example of a
        _____ route.

        A   secondary

        B   national

        C   main

        D   arterial

1.4   The rivers in block A3 flow downhill in a _____ direction.

        A   north- easterly

        B   south- easterly

        C   north- westerly

        D   south- westerly

1.5   The height of the trigonometrical station in C2 is _____ metres

        A   299

        B   1757,2

        C   17572

        D   29,9

1.6   The highest point on the map is found in block …

        A   A2

        B   A3

        C   A4

        D   A5

1.7   The coordinates of the Walton station in F4 are …

        A   28⁰ 20`52`` E  29⁰ 10` 45`` S

        B   28⁰ 20`52`` S  29⁰ 10` 45`` E

        C   28⁰ 20`15`` S 29⁰ 10`52``E

        D   28⁰ 20`15`` S 29⁰ 10`45``E

1.8   The height of the dam wall on the farm Walton in G4 is _____ metres

        A   1640

        B   1660

        C   1630

        D   1670

1.9   The slope of the section of Platberg Hill in A3 is an example of a _____ slope.

        A   concave

        B   terraced

        C   gentle

        D   convex

P a g e 2

1.10   The direction from Queens Hill in C2 to Kings Hill in D4 is ___.

      A   SE

      B   NE

      C   ESE

      D   SW

1.11   The area of block A1 on the map is …

      A   5,92km².

      B   6,92km².

      C   5,82km².

      D   6,82km².

1.12   The distance from Queens Hill in C2 to Kings Hill in D4 is …

      A   4km.

      B   4,5km

      C   5km

      D   5,5km

1.13   The river flows in a _____ direction from the dam near the farm Arcadia in D5.

      A   south-westerly

      B   north-easterly

      C   northerly

      D   southerly

1.14   The bearing from spot height 2263 in A3 to spot height 2323 in A5 is…

      A. 75^0.

      B 78^0.

      C 73^0.

      D 68^0.

1.15   The dominant activity in the southern part of the map is …

      A   mining

      B   forestry

      C   fruit farming

      D   fishing

Question 2

2.1   Calculate the approximate area of the golf course in A1 and A2 in kilometres.   (3)

2.2   Use the information on the map to update the magnetic declination for the year 2014.   (3)

2.3   Calculate the gradient of the slope from trig beacon 285 in F3 to spot height 1633 in E2.   (4)

Answers

Exam Questions

Question 1

1.1   B

1.2   C

1.3   B

1.4   D

1.5   B

1.6   D

1.7   B

1.8   C

1.9   A

1.10   C

1.11   C

1.12   C

1.13   A

1.14   B

1.15   C

Question 2

2.1   7,1 km^2

2.2   **Mean Magnetic Declination:** 20°28' W of TN

Mean Annual Change: 8' W

No of Years: 2014 – 2001 = 13 years

Total Change = 13 x 8' = 104

= 1°44'

Mag Dec (2014)

= 20°28' + 1°44'

= 21°72'

= 22°12'

2.3   1: 11,23