NAME…………………………………ADM NO…………DATE…………………

**KISIRIRI SECONDARY SCHOOL**

**P.O. BOX 93-20500 TEL 0721-451-691**

**CAT TWO OF 1ST TERM 2014**

**FORM TWO**

**MATHEMATICS**

**ONE HOUR**

1.From a balcony of a house, an observer notices that the angle of depression to the foot of a multi-storey building is 30o. The angle of elevation of the same building from the balcony is observed to be 500. Using a scale of 1 cm rep 10m, determine to the nearest meters the height of the building if the horizontal distance between the observer and the multi- storey building is 40m a part. (5 marks)

2.Use the mathematical tables to find:

(i) The square of 86.46 (1 mark)

(ii) The reciprocal of 27.56 (1 mark)

(iii) The cube of 0.586367 (1mk)

(iv) The cube root of 0.0007319 (2mks)

3. Four points A, B, C and D are situated on a horizontal plane such that B is 200m on a bearing of 0650 from A. C is 280m on bearing of 1200 from B and D is 160m due west of C.

(a) Draw a rough sketch showing the position of the four points. (1 mark)

(b) Using a scale 1cm rep 40m, draw an accurate scale drawing representing the position of A, B, C and D. (5 marks)

(c) By measurement use your scale drawing to find the distance and bearing of;

(i) D from A (2 marks)

(ii) B from D (2 marks)

4. Use a ruler and compasses only for all constructions in this question.

(a) Construct triangle ABC in which BC = 6.5 cm, and angle ABC=450 and angle ACB=600, (3 marks)

(b) Measure AB and AC (2 marks)

(c) Construct a circle that touches the vertices of the triangle. (4 marks)

(d) Measure the radius of this circle. (1 mark)

5. A coffee field has its measurements entered in a field book as shown below.

(a) Sketch the coffee field using a scale of 1cm rep 40m. Take VY = 400m as the base line. (4mks)

|  |  |  |
| --- | --- | --- |
|  | Y |  |
|  | 360 | 80 to Q |
| To R 80 | 280 |  |
| To S 60 | 200 |  |
|  | 80 | 200 to P |
|  | V |  |

(b) find the area of the field in hectares. (6mks)