



# MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2013/2014

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

**Examination for Diploma in building technology module I**

**BCE BT 109/ BCE CD 109 Engineering drawing I**

**Date:**

**Time:**

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*This paper consists of **two** sections A & B*

*Answer all questions in section A and any other two questions in section B*

*Maximum marks for each part of a question are as shown*

*All measurements are in millimeters.*

## **SECTION A: COMPULSORY**

1. Figure I shows a design for a wire frame fire screen. Copy the figure full size, using geometrical methods for spacing the vertical wires equally and a compass to mark the position of the wires which are underlined at  $30^{\circ}$ . (10 marks)
2. The pattern in figure 2 is made up of interlacing equilateral triangles. Draw the figure full size to the dimensions shown. (10 marks)
3. Figure 3 shows the bottom half of a regular octagonal bearing washer. Draw the shape showing the depth D and width W. (10 marks)

## **SECTION B**

4. Copy figure 4 full size and dimension it accordingly. (10 marks)
5. Figure 5 shows an irregular pentagon. Copy the figure full size and convert it into a square of equivalent area. (10 marks)
6. The major and minor axis of an ellipse are 130 and 100 respectively. Construct the ellipse using the foci method. (10 marks)

1. The pattern shown in fig I is made up of interlacing equilateral triangles. Draw the figure full size to the dimensions shown.

2. Fig II shows a design for a wire frame fire screen copy the figure full size, using a geometrical method for spacing the vertical wires equally and a compass to mark the position of the wires which are inclined at  $30^{\circ}$



6. Fig VI is an irregular pentagon

Copy this figure full size and convert it into a square of equivalent area.

(20 marks)

7. The major axis of an ellipse are 130 and 100mm respectively. Construct the ellipse using the foci method.

(20 marks)

8. In fig VIII, below A and O are fixed points and AB and BC are two links which are pivoted at B. the point D is attached to a crank pin which moves on the pitch circle as indicated.

Draw the locus of c for one revolution of the crawk pin.

(20 marks)