



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST SEMESTER EXAMINATION FOR DIPLOMA IN BUILDING CONSTRUCTION
TECHNOLOGY

BCEBT 106: ENGINEERING DRAWING I

Date:

Time:

INSTRUCTIONS:

- *This paper comprises FIVE questions*
- *Question one is compulsory and 30 marks*
- *Answer any other two questions*

1. (a) Print the following paragraph in upper case letters; “Engineering drawing is a universal language of communication in the construction industry. By use of different types of lines, symbols, dimensions and notations, a draughtsman can accurately describe the form, size, kind of material and method of construction”.
(10 marks)
- (b) (i) Draw a triangle ABC given the following information; Side AB=60, BC=45, AC=60.
(5 marks)
- (ii) Construct a circle inside the triangle ABC touching the three sides.
(5 marks)
- (c) Figure 1 shows the design for a wire frame fire screen. Copy the figure full size using a geometrical method for spacing the vertical wires and a pair of compass to mark the wires inclined at 30°. (10 marks)

2. (a) Construct an ellipse using the concentric circles method given the major and minor axis as 110 and 76 respectively. (15 marks)
- (b) Construct a regular hexagon given one side = 30. (5 marks)
3. (a) Figure 3 shows an irregular pentagon. Copy the figure full size and by use of a geometrical method, convert it into a square of equivalent area. (16 marks)
- (b) Draw the following angles using the set square 15° , 75° , 105° , 135° (4 marks)
4. (a) Figure 4 shows the cross-section of a wooden handrail. Copy the drawing full size using a pair of compass to construct the angles. (12 marks)
- (b) Construct a regular octagon in a square of side 50mm (8 marks)
5. (a) By use of a universal method, inscribe a regular pentagon in a circle of diameter 80mm (10 marks)
- (b) Figure 5 shows a metal wall mounted roll holder for toilet paper. Copy the drawing full size and by construction, show the largest diameter of roll which can be placed in the holder to touch both the sides and the base. (10 marks)