MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR CERTIFICATE IN
BUILDING CONSTRUCTION TECHNOLOGY**

BCE BT 107: ENGINEERING DRAWING I

DATE: 10/4/2015   **TIME: 2:00 – 4:00 PM**

Instructions

- *You should have the following for this examination*
    1. **Drawing paper size A2**
    2. **Drawing instruments**
- **Question one is compulsory and carries 30 marks**
- **Answer any other two questions which carry 20 marks each**
- **Maximum marks for each part of a question are as shown.**
- **All measurements are in millimeters**

1. A) Draw a line 125mm long and divide it into a rotation of 2:3:5.   (5 marks)

   b) Briefly explain the uses of the following drawing instruments.

   i) Tee square

   ii) Set squares

   iii) Pair of dividers

   iv) Protractor

   v) Pair of compasses   (5 marks)

   c) Construct a triangle given the following information

   AB   =   75mm

   BC   =   100mm

   AC   =   70 mm   (5 marks)

d) Using a pair of compasses, construct the following angles

   i) 60^0

   ii) 15^0

   iii) 45^0

   iv) 165^0

   v) 30^0 (5 marks)

2. A) Print the following paragraph using lower case letters:

    "Good lettering and neat linework are very pleasing to look at on a drawing and constant practice is aimed at producing plain and clear letters which results in the attainment of a good standard". (10 marks)

    b) Draw a circle and show the following

    i) Sector

    ii) Arc

    iii) Chord

    iv) Segment

    v) Tangent (10 marks)

3. A) Draw a perpendicular to a given straight line from a point 20mm below the straight line.

    (10 marks)

    b) Draw a line 120mm long and divide it into seven equal parts. (10 marks)

4. A)Draw a line 105mm long and bisect it. (10 marks)

    b) Construct a square 75mm sides hence draw a rectangle equal in area to it (10 marks)

5. A) Show the following types of angles.

    i)   Acute angle

    ii)   Obtuse angle

    iii)   Reflex angle (9 marks)

    b) Find the centre of a circle of radius 30 mm. (5 marks)

    c) Inscribe a square in a circle of radius 30 mm. (6 marks)