THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)
Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

CONSTRUCTION TECHNICIAN PART I

EBC 1131: ENGINEERING DRAWING

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*
- *Drawing paper size A1*
- *Drawing Instruments*

This paper consists of **EIGHT** questions
Answer any **FIVE** questions. All questions carry equal marks
Maximum marks for each part of a question are clearly shown
This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1(20 marks)

a) Construct the following angles without using a protractor
    (i)   3 ¾°
    (ii)   7 ½°
    (iii)   15°
    (iv)   22 ½°
    (v)   45°   (10 marks

b) Construct a diagonal scale in which 100mm represent 1m and having a minimum and maximum reading of 10mm and 2m respectively. Show the following readings on the scale.
    (i)   1.740m
    (ii)   0.360m   (10 marks)

SECTION B (Answer any TWO questions from this section)

Question 2 (20 marks)

    a) Use freehand sketches to draw pictorial drawings of the following
        (i)   Nallet
        (ii)   Nail punch
        (iii)   Warrignton hammer
        (iv)   Sliding bevel   (10 marks)

    b) Construct a plain scale in which 50mm = 1m with a minimum and maximum reading of 0.1m and 4m respectively. Indicate the following reading on the scale   (10 marks)
        (i)   2.4m
        (ii)   3.8m

Question 3 (20 marks)

a) Show graphic representation of the following materials:

    (i)   Brick
    (ii)   Plaster
    (iii)   Concrete
    (iv)   Stone   (10 marks)

b) Show **FIVE** types of dimension lines used in technical drawing   (10 marks)

Question 4 (20 marks)

a) (i) Sub-divide line AB, 210mm long into proportions of 4:5:6   (6 marks)
    (ii) Indicate the dimension of the middle proportion in (b) (i)   (2 marks)

b) (i)   Draw **SIX** main types of lines used in technical drawing

(ii)   Using 5mm high upper case lettering, label the lines in (i) above   (12 marks)

Question 5 (20 marks)

a) Construct an external tangent to two unequal circles of diameters 90mm and 60mm respectively. The centre to centre distance is 150mm.
b) Construct an internal tangent to the circles in question 5(a)   (20 marks)

Question 6 (20 marks)

Draw full size in First Angle Projection, the following views of the object in (fig 1)

a)   Front elevation in direction of arrow Z
b)   End elevation in direction of arrow X
c)   Plan in the direction of arrow Y   (20 marks)

Question 7 (20 marks)

Make Isometric Projection of the views in First Angle Projection shown in figure 2   (20 marks)

Question 8 (20 marks)

Draw two polygons of a hexagon and an octagon inside circles of 90mm diameters. Show the methods of construction   (20 marks)