TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN CIVIL ENGINEERING
(BSCE 14M – Y1 S1)

EME 2101: ENGINEERING DRAWING I

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: OCTOBER 2014
TIME ALLOWED: 3 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer booklet*

This paper consists of **FIVE** questions.
Answer question **ONE (COMPULSORY)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One (COMPULSORY)

Draw the isometric projection and the third Angle orthographic projection of the casting shown in figure 1. The arrow indicates the front elevation. **(30 marks)**

Question Two

a) Draw the locus of a point equidistant from a given line and a given circle. **(10 marks)**

b) Differentiate between the following three-dimensional views using a cuboid. **(10 marks)**
   (i) Oblique perspective
   (ii) Two-point perspective projection
   (iii) Three-point perspective projection

Question Three

Plot the cam profile which meets the following specifications:

Shaft diameter   – 15mm
Minimum diameter   – 5
Lift   – 12mm
Performance   – 90º uniform velocity to maximum lift
                      - 90º Dwell
                      -180º uniform retardation to maximum fall
Rotation   -Clockwise
Your cam profile must be drawn, twice full size. **(20 marks)**

Question Four

Draw the three views of a hexagonal nut of size M30. Mark the proportions in terms of the diameter, d **(20 marks)**

Question Five

Define the following gear terms and use a diagram to further expound. **(20 marks)**

   (i) Addendum (A)
   (ii) Dedendum (B)

(iii) Clearance (C)
(iv) Working Depth (HK)
(v) Whole depth (HT)