



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
UNIVERSITY EXAMINATION FOR BACHELOR OF SCIENCE IN CIVIL
ENGINEERING (BSCE)

ECE 2101: ENGINEERING DRAWING I

END OF SEMESTER EXAMINATION

SERIES: APRIL 2013

TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions.

Answer question **ONE (COMPULSORY)** in section **A** and any other **TWO** questions from section **B**

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

SECTION A

Question One (Compulsory)

The figure below shows an isometric view of an object. Draw the following: **(30 marks)**

- (i) The isometric view of the object as shown
- (ii) The front view in the direction of the arrow
- (iii) The top view
- (iv) The side view from the right

Draw in first angle orthographic projection

SECTION B (Attempt any TWO questions)

Question Two

Construct the front view of the assembly of a hexagonal head bolt of nominal diameter $d = 30$, with a hexagonal nut keeping the axis horizontal. The length of the bolt = 120mm, threaded portion of bolt = 80mm. Mark the proportions in terms of the diameter, d . **(20 marks)**

Question Three

Plot the cam profile which meets the following specifications:

Shaft diameter 10mm

Minimum diameter 25mm

Lift 13mm

Performance 90° uniform velocity to $\frac{1}{2}$ maximum lifts

90° simple harmonic motion to maximum lift at $\frac{1}{2}$ rotation. 180° uniform retardation to maximum fall.

Rotation clockwise

(20 marks)

Question Four

Draw the sectional elevation and the sectional end view of a solid muff coupling. The part drawing is given below. **(20 marks)**

Question Five

Using a well labeled drawing, show the following as used in the nomenclature of screw threads:

- (i) The external thread
- (ii) The internal thread
- (iii) Depth of thread
- (iv) Nominal diameter
- (v) Minor diameter

Give a brief description of each of the terms above.

(20 marks)