



# TECHNICAL UNIVERSITY OF MOMBASA

## DEPARTMENT OF MECHANICAL AND AUTOMOTIVE ENGINEERING

FIRST YEAR SECOND SEMESTER UNIVERSITY EXAMINATION FOR THE DEGREE  
IN BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING (BSME)

### EMG 2105 ENGINEERING DRAWING II

#### END OF SEMESTER EXAMINATIONS

**SERIES:** DECEMBER, 2013

**TIME:** 2 HOURS

#### INSTRUCTION TO CANDIDATES

1. You should have the following for this examination:-
    - Answer Booklet
    - Scientific Calculator
    - Drawing Instruments
    - Thermodynamic Table
  2. This paper consists of **FIVE** questions.
  3. Answer **ONE** is **COMPULSORY** and any other **TWO** Questions.
  4. This paper consists of **SIX** printed pages.
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#### Question ONE

Figure Q1 shows parts of a lever bracket. Draw full size in 3<sup>rd</sup> angle orthographic projection the following views of the assembled bracket:

- (a) Front elevation
- (b) Sectional End elevation along AA
- (c) Include the nut
- (d) Show six major dimensions and prepare a parts list

(30 marks)

#### Question TWO

Figure Q.2 shows a truncated octagonal pyramid. Copy the given view and then draw:

- (a) A complete plan
- (b) True shape
- (c) End elevation

(20 marks)

### Question THREE

- (a) (i) State **TWO** uses of screw threads.
- (ii) With the aid of sketches show the features of the following forms of threads:
  - (I) ACME
  - (II) BUTTRESS
  - (III) METRIC

(6 marks)

- (b) Construct the profile of a single start left-hand square thread with a major diameter of 60mm and a pitch of 24mm. Draw one helix only.

(14 marks)

### Question FOUR

- (a) Two partially drawn open ended cylinders are shown in Figure Q.4. Draw the views and include a plan view and the interpenetration curve as seen from the front view.

(12

marks)

- (b) Draw the sheet metal development of a cylinder A in (a).

(8 marks)

### Question FIVE

- (a) With the aid of sketches explain the **THREE** classes of fit. (6 marks)
- (b) Figure Q.5 shows a shaft, bush bearing and housing assembly. Using BS4500A provided, calculate and state the type of fit between:

- (i) The shaft and bush
- (ii) The bush and housing

(8 marks)

- (c) Using neat sketches, dimension the parts in Figure Q.5, showing the tolerances correctly.

(6

marks)