



**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2014/2015 ACADEMIC YEAR**

**FIRST YEAR FIRST SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
BACHELOR OF SCIENCE IN CIVIL AND STRUCTURAL  
ENGINEERING**

**COURSE CODE: CSE 111**

**COURSE TITLE: ENGINEERING DRAWING I**

**DATE: 16<sup>TH</sup> DECEMBER 2014**

**TIME: 8AM – 12.00PM**

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**INSTRUCTIONS:**

1. This question paper contains **FOUR** questions.
1. Answer **ALL** questions.
2. Question one should be answered in the answer booklet provided.
3. Questions 2, 3 and 4 should each be answered on a separate A3-size drawing paper.
4. Examination duration is **4 Hours**

MMUST observes **ZERO** tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over.

**Question 1 (20 marks)**

- (a) Explain the relevance of graphical communication in systematic approach to solving engineering problems. **(6 marks)**
- (b) It is commonly acknowledged that computer aided design (CAD) has “completely” replaced the traditional hand tools in engineering and technical drawing:
- (i) Give two examples of how traditional drawing tools have been replaced by CAD techniques.
  - (ii) Justify why knowledge of and use of traditional drawing tools may still be relevant in a local situation like Kenya today. **(8 marks)**
- (c) Use a suitable sketch of your own choice to illustrate the difference between (i) a dimension line and an extension line and (ii) a section line and a cutting plane line. **(6 marks)**

**Question 2 (20 marks)**

Draw the following on one A3-size paper. In each case explain the procedure used in brief notes below or beside each figure.

- (a) Given line  $XY = 10$  cm. Divide line  $XY$  into three parts in the ratio of 2:3.5:6. Dimension the length of each segment. **(4 marks)**
- (b) By use of construction equipment only, determine the square root of 65 to one decimal place. **(4 marks)**
- (c) Construct a square whose diagonal is 20 mm to a scale of 5:1. State the length of each side of the square. **(6 marks)**
- (d) Draw an internal tangent  $PQ$  to two circles whose radii are 40 mm and 20 mm with centres at 80 mm apart. Use a FULL SCALE. **(6 marks)**

**Question 3 (20 marks)**

A square pyramid has a height of 70 cm and a square base of sides 30 cm. Draw the elevation, side view and plan of the pyramid when:

- (a) in vertical position with the base on the horizontal plane. Use a scale of 1:5. **(10 marks)**
- (b) the base is inclined at 30 degrees rotated counterclockwise to the horizontal plane. Use a scale of 1:5. **(10 marks)**

**Question 4 (20 marks)**

- (a) Draw the isometric drawing of the orthographic views given in Figure Q4A using a scale of 1:1. **(10 marks)**
- (b) Draw the orthographic views of plan, front elevation and side elevation for the given isometric drawing in Figure Q4B using a scale of 1:2. **(10 marks)**

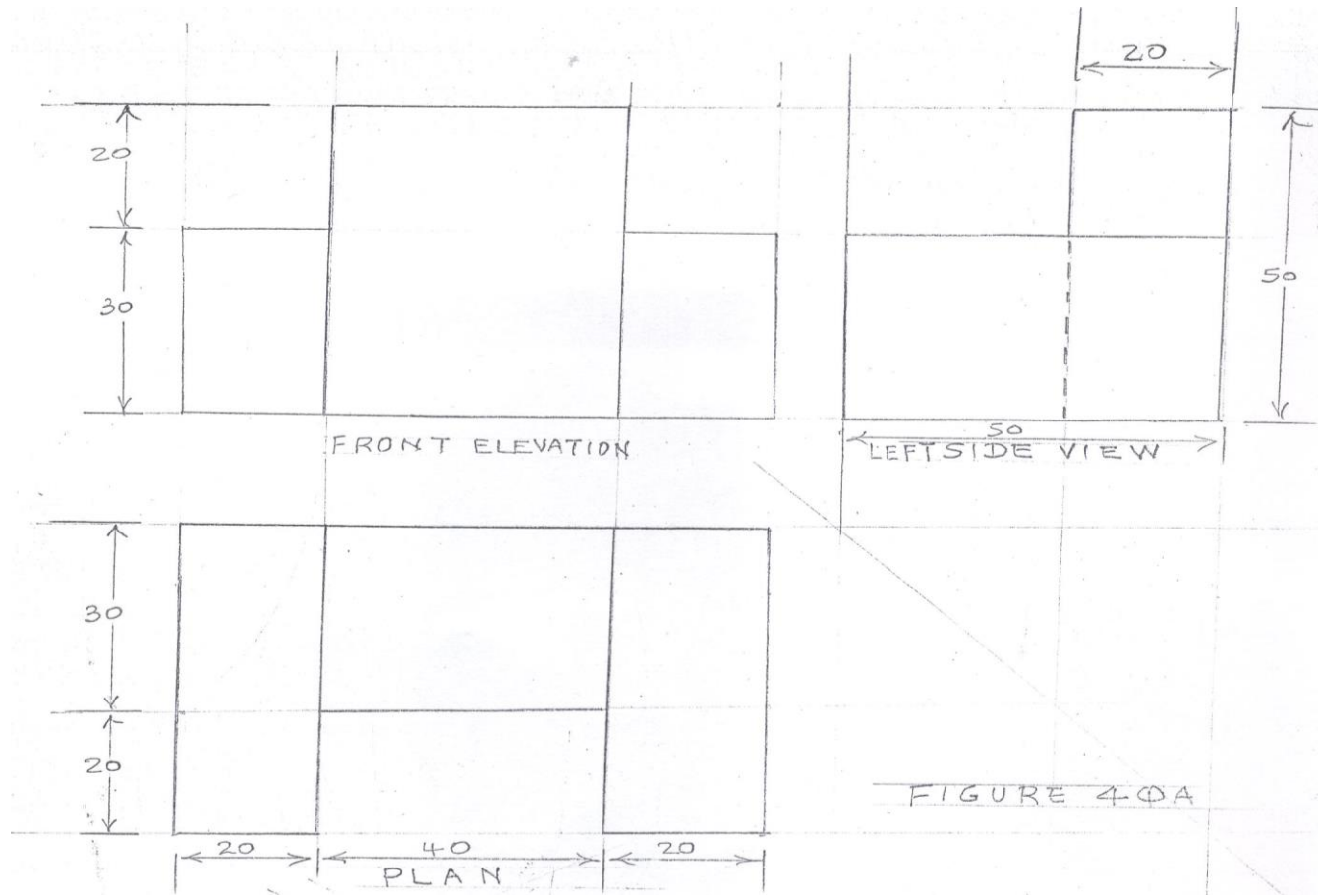


FIGURE 4-ΦA

