



(University of Choice)

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

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR**

FIRST YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE

IN

**BACHELOR OF SCIENCE IN CIVIL AND STRUCTURAL
ENGINEERING/ BACHELOR OF TECHNOLOGY IN BUILDING
CONSTRUCTION**

COURSE CODE: CSE 111

COURSE TITLE: ENGINEERING DRAWING I

DATE: TUESDAY 19TH JANUARY 2021 TIME: 8.00PM – 11.00 AM

INSTRUCTIONS:

1. Answer Question ONE and any other THREE Questions
2. Marks for each question are indicated in the parenthesis.
3. Examination duration is **2 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over.

SECTION A (19 MARKS)

Question One

- a) Define the term Drawing as used in Engineering (1 marks)
- b) A drawing can be created in many ways, please state 3 ways (1½ marks)
- c) Name any 4 drawing instruments you know and their purposes (2 marks)
- d) Pencil leads are made of graphite with clay added in varying amounts to make 18 grades from 9H to 7B. These grades can be divided in three groups, name them: (1½ marks)
- e) The title block is an important feature in drawing because it gives all the information of the prepared drawing. Using a sketch, illustrate the information contained in the title block (4 marks)
- f) Freehand lettering is art of writing the alphabets without the use of drawing instruments. Name the two types of free hand lettering while using your name as an example: (2 marks)
- g) Write italic lettering upper case, lower case and numbers 0 to 9 angle of inclination taken from left to right take as 75°. (3 marks)

SECTION B (21 MARKS)

QUESTION TWO (7 MARKS)

Draw a circle of 40 mm radius and divide it into 6 equal parts with the help of 30°-90°-60° set square and T-square and mini-drafter?

QUESTION THREE (7 MARKS)

The scale is actually a measuring stick, graduated with different divisions to represent the corresponding actual distances according to some proportion, thus giving rapidity in marking off distances on drawing. State the following in line with scales:

- i. Two uses of scales
- ii. Three sizes of scales as used in engineering practice
- iii. Five standard reducing proportions
- iv. On a survey map the distance between two places 1 km apart is 5 cm. Construct the scale to read 4.6 km.

QUESTION FOUR (7 MARKS)

A hexagonal prism with side of base 25mm and 50mm long is resting on a corner of its base on HP. Draw the projections of the prism when its axis is making 30° with HP and parallel to

Use the following information and make the sketch step by step.

- 1) Draw the line AB 80mm long. Mark the point C 40mm above the line and 25mm from the left hand end.
- 2) Set a compass, centered at C, to suitable size so as to draw an arc which cuts the line AB at E and F.
- 3) Re-set the compass and, with the compass centered at E, then at F draw the crossing arcs G.
- 4) Draw a line CG. The line CD is perpendicular to AB

QUESTION FIVE (7 MARKS)

Use the following steps to construct an Ellipse by four arcs method

- i. Draw the 30 degrees lines which represent the square circumscribing the circle. Lines AB, BC, CD and DA are all at 30 degrees and are of the same length.
- ii. Draw the diagonal AC.
- iii. Draw BF and DE in which E is the center point of AB and F is the center point of CD.
- iv. With G, the intersection of AC and BF, as center, draw an arc of radius GF.
- v. Draw an arc of centre H and radius HE.
- vi. With Centre B and radius BF draw an arc
- vii. With Centre D and radius DE draw an arc
- viii. You have now drawn the 4 arcs to complete the construction