TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING &CIVIL ENGINEERING

DIPLOMA IN BUILDING & CIVIL ENGINEERING

EME 2105: ENGINEERING DRAWING AND DESIGN

Series: August 2019

Time allowed: 2 hours

Instructions to Candidates

You should have the following for this examination:

- Answer booklet
- A set of drawing instruments
- Cartridge drawing paper size A 2

This paper consists of **FIVE** questions. Answer any **THREE** of the **FIVE** questions.

All questions carry equal marks.

Maximum marks for each part of a question are as shown

This paper consists of **FOUR** printed pages

Question 1

Fig 1 shows the three views of a bearing block in FIRST ANGLE ORTHOGRAPHIC PROJECTION. Using a scale of 1:1, draw a cabinet oblique drawing of the block with ‘x’as the lowest point.

(20 marks)

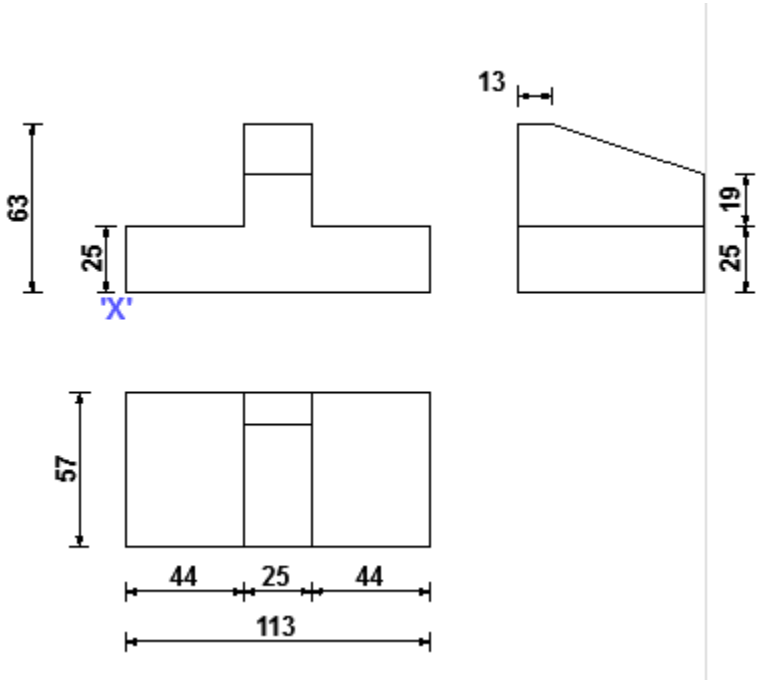

Fig 1

Question 2

(a) Construct an ellipse by the intersecting arcs method given the major and minor axes as 102 and 68 mm respectively.

(10 Marks)

(b) Draw an involute to a hexagon 42mm diameter.

(10 Marks)

Question 3

(a) Construct a helix given the pitch and generating circle diameter as 56 and 25 mm respectively.

(10 Marks)

(b) Draw a cycloid to a point on the circumference of a circle 25mm diameter which rolls without slip on a straight line for a complete revolution.

(10 Marks)

Question 4

Fig 2 shows the in-complete plan and elevation of a right truncated square pyramid in 'FIRST ANGLE'. Draw the following views of the pyramid:

a) The given front view
b) A complete plan
c) A side view showing the cut surface
d) Surface development of the slanting faces

(20 Marks)

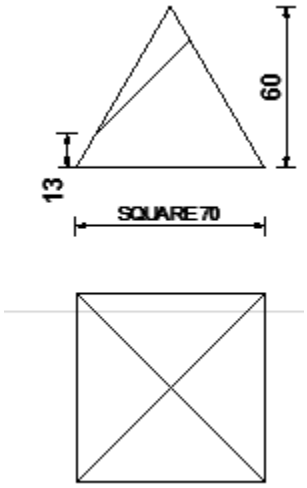

Fig 2

Question 5

Shown in fig 3 is a pictorial drawing of a support bracket. Draw, in full size scale, the following for the bracket in FIRST ANGLE ORTHOGRAPHIC PROJECTION.

(a) Front elevation 'A' **(8 Marks)**
(b) A side elevation 'B' **(5 Marks)**
(c) Plan 'C' **(7 Marks)**

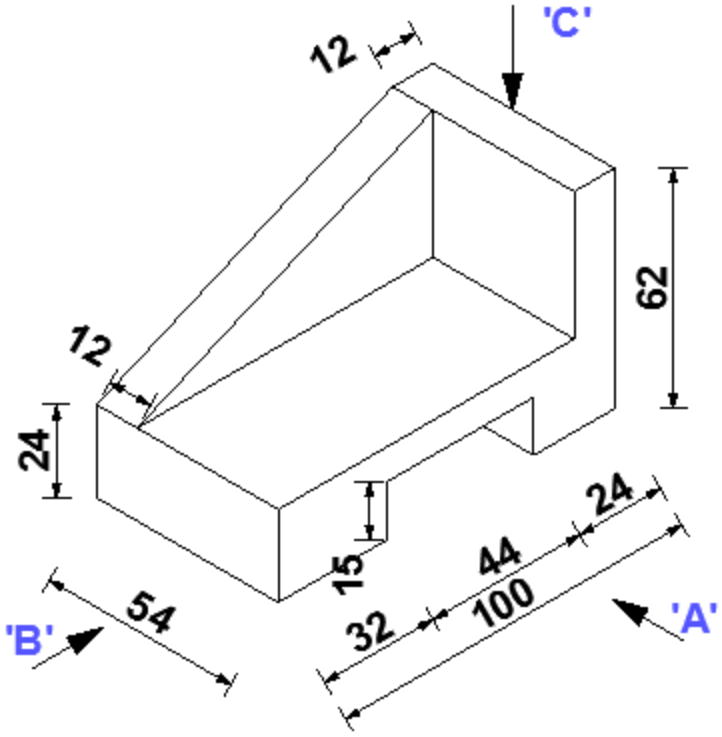

Fig 3