



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
Department of Electrical & Electronics Engineering
UNIVERSITY EXAMINATION FOR:
Diploma of Technology in Electrical & Electronics Engineering
EME 2131: Engineering Drawing & Design I
SPECIAL/ SUPPLEMENTARY EXAMINATION
SERIES: AUGUST 2019
TIME: 3 HOURS
DATE: Pick Date Aug 2019

Instruction to Candidates:

You should have the following for this examination

- *Student I.D. Card & Examination Pass*
- *Answer booklet*
- *Non-Programmable scientific calculator*

This paper consists of **FIVE** questions. Attempt question **ONE** and any other **TWO** questions.

Maximum marks for each part of a question are as shown.

Do not write on the question paper.

Question ONE (Compulsory)

Figure 1 shows a Metal Casting drawn in Isometric projection. Draw the block in first angle orthographic projection the following views;

- Front elevation viewed from the right hand side.
- End elevation viewed from the left hand side.
- Plan viewed from the top.

Dimension your drawing correctly and show the symbol of projection.

(20 marks)

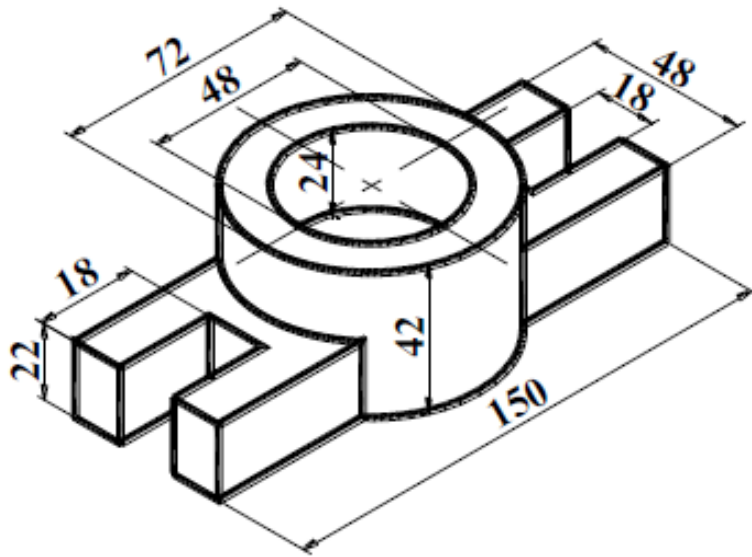
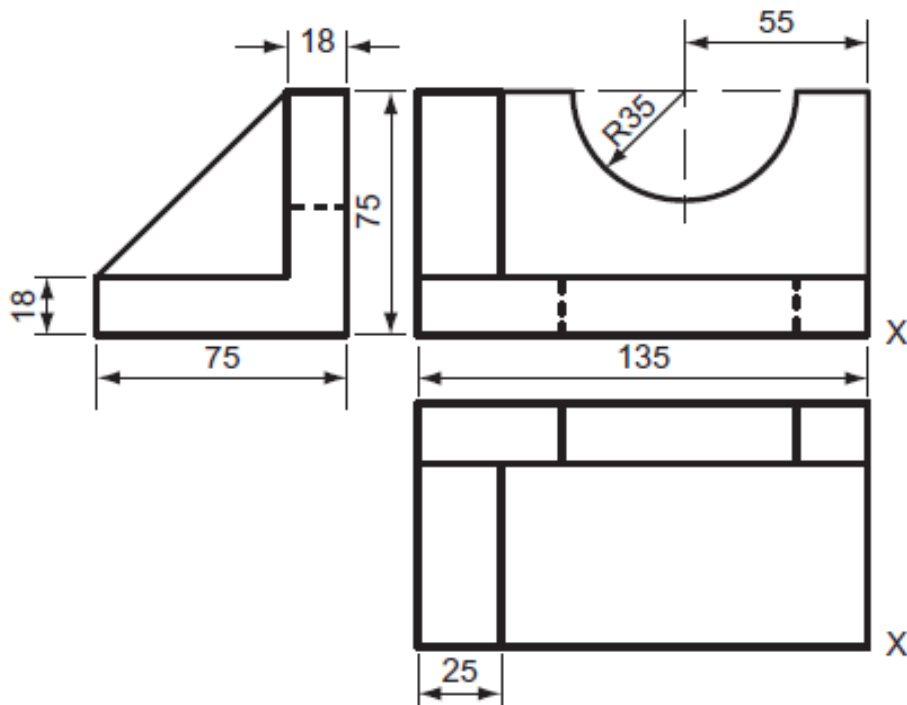


Figure 1

Question TWO

Figure 2 shows three views of a mechanical block drawn in first angle orthographic projection. From the views given, construct an Isometric view of the block. (20 marks)



Dimensions in mm

Figure 2

Question THREE

- a) Construct a diagonal scale 50 mm to represent 1 mm, 3 mm long and to read to 0.01 mm. (10 marks)
- b) Using the scale constructed in (a) above, construct quadrilateral ABCD, AB = 2.63 mm, AB is parallel to CD and 1.18 mm apart, CD = 0.76 mm, angle ABC = $67\frac{1}{2}^\circ$.
What is the name of the quadrilateral? (10 marks)

Question FOUR

Figure 3 below shows a link mechanism where crank OA rotates about a fixed centre O whilst crank CB oscillates about the fixed centre C. Lever AB is pin-jointed at both ends.

- a) Construct the locus of point P, which is 60mm from B on lever AB, for one complete revolution of crank OA.
- b) State the total angle of oscillation of crank CB.
- (20 marks)

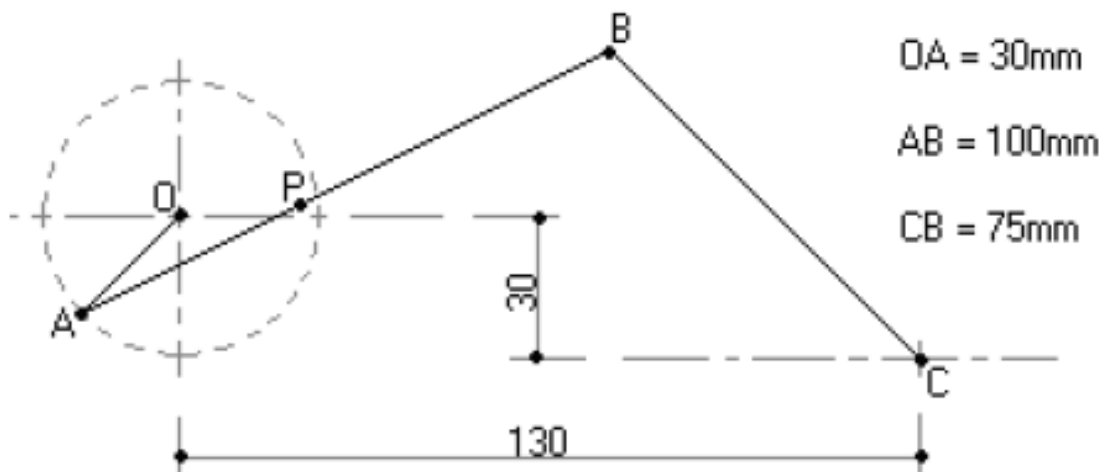


Figure 3

Question FIVE

Figure 4 shows two views of a mechanical block drawn in first angle orthographic projection. From the views, construct an Oblique view of the block. (20 marks)

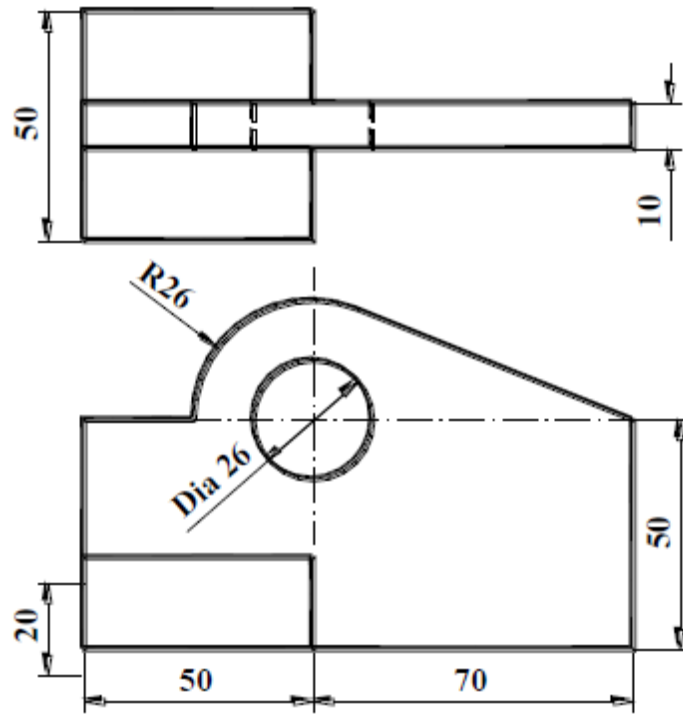


Figure 4