



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
Department of Mechanical & Automotive Engineering
UNIVERSITY EXAMINATION FOR:
Diploma in Mechanical Engineering
EME 2105: Engineering Drawing & Design I
END OF SEMESTER 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*
- *A2 size Drawing paper & Drawing Instruments*
- *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 mechanical block drawn in pictorial. Draw the block to **SIZE** 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.

(20 marks)

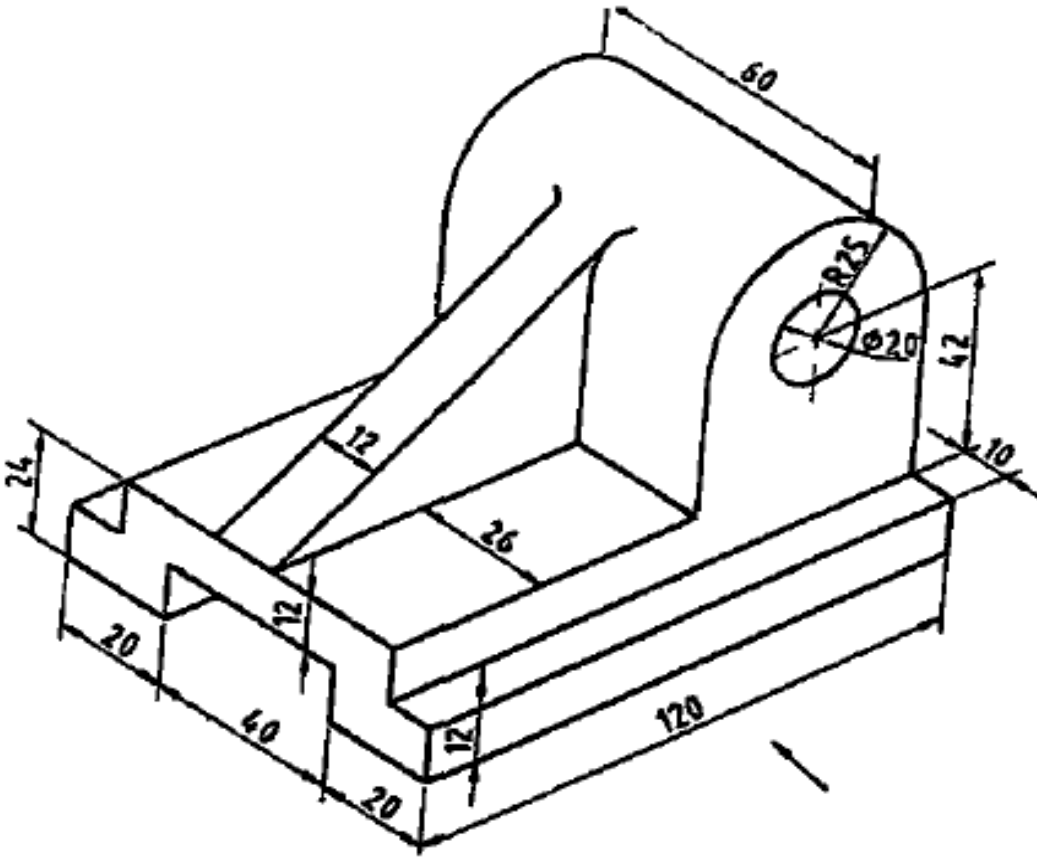


Figure 1

Question TWO

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

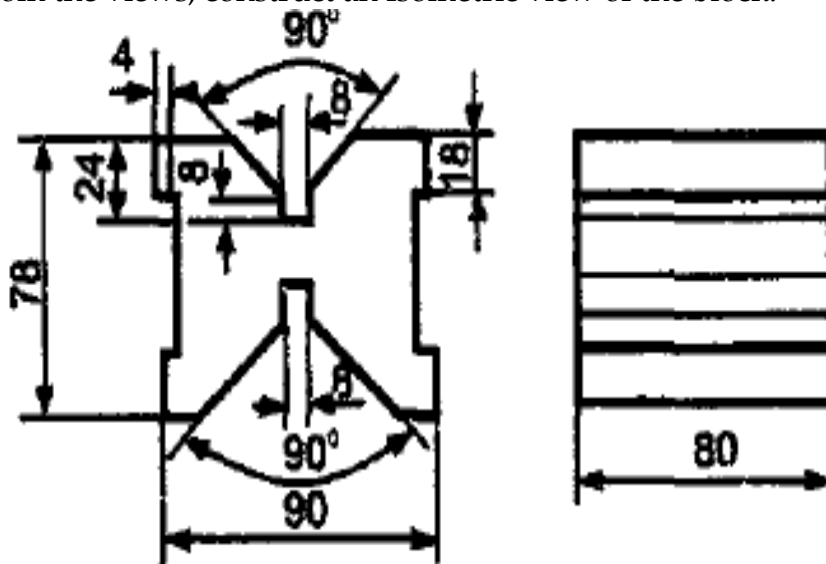


Figure 2

Question THREE

- a) Construct a diagonal scale 50 mm to represent 1 mm, 3 m long and to read to 10 mm. Show the following readings on the scale:
- 1m 140mm
 - 2m 450mm
 - 3m 970mm
- (10 marks)
- b) **Figure 3** shows three views of a mechanical block drawn in first angle orthographic projection. From the views, construct an Oblique view of the block. (10 marks)

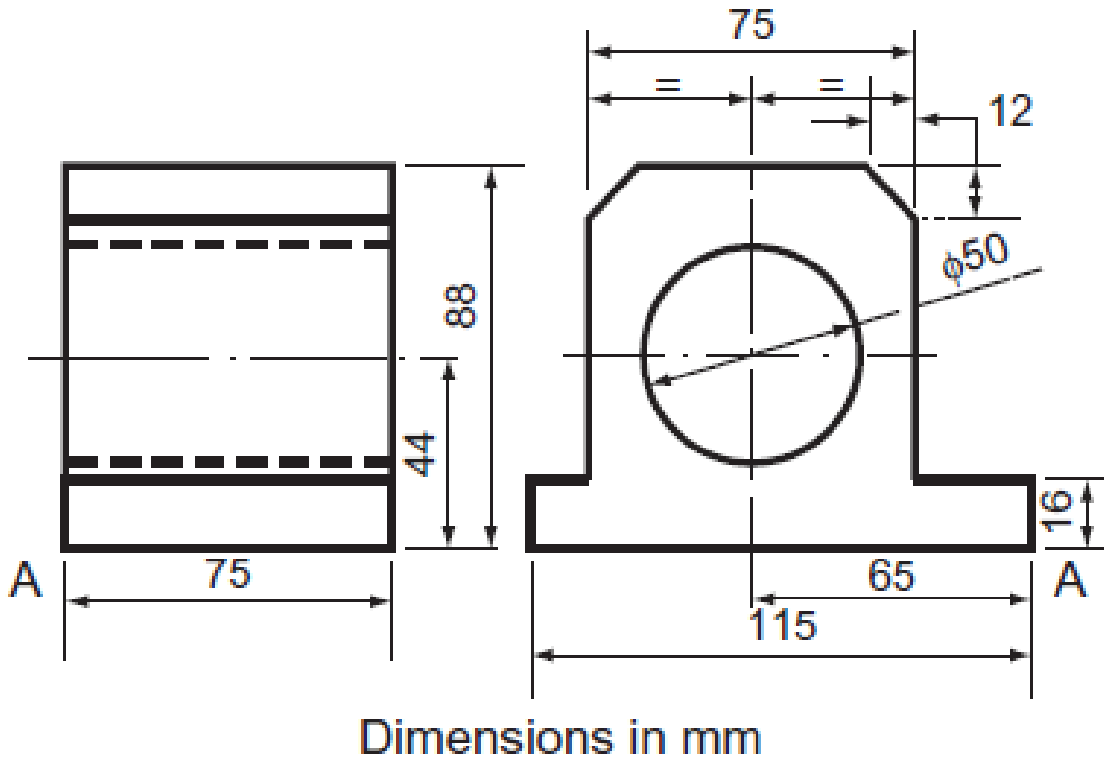


Figure 3

Question FOUR

Front view of a sheet metal scoop is shown in **Figure 4**. Copy the given view and Draw;

- The end elevation viewed from the left hand side.
- The development of the shape of the sheet metal required to make the body of the scoop with the joint along AB.

(20 marks)

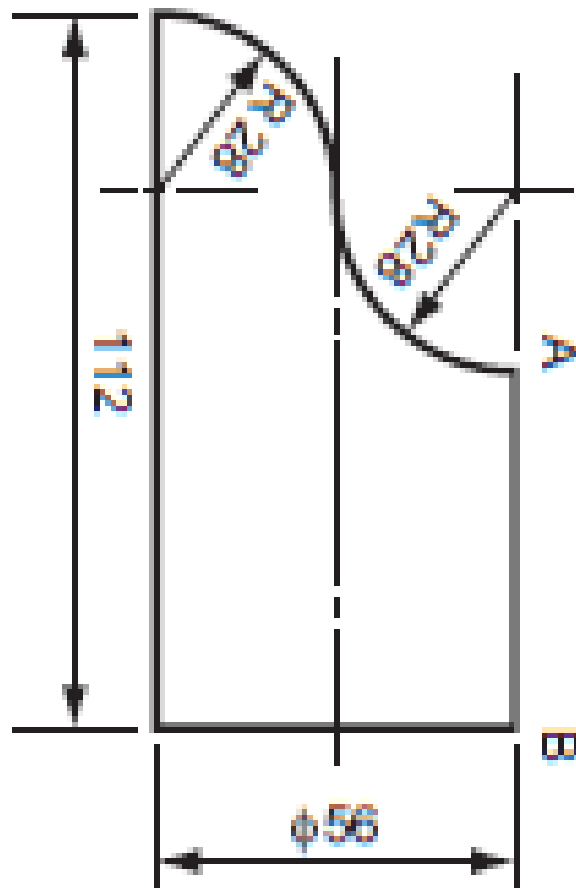


Figure 4

Question FIVE

- a) Construct an ellipse in a rectangle measuring 120 mm by 70 mm. **(10 marks)**
- b) **Figure 5** shows a slotted link AB which rotates in clockwise direction as a round ball at Q rolls in the slot towards B. If the link makes one and a half revolutions as the ball rolls from Q to B, plot the path traced by the ball. Name the path traced and state the application of such paths in engineering. **(10 marks)**

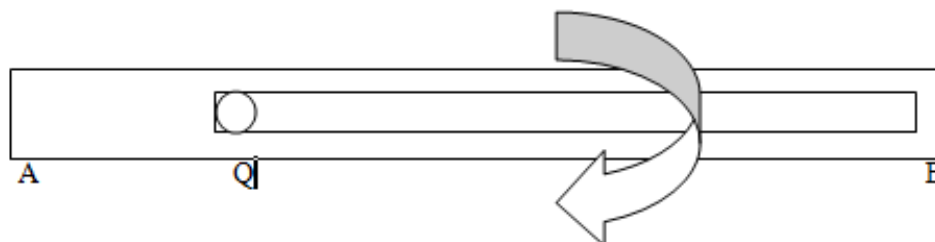


Figure 5