



MACHAKOS UNIVERSITY

University Examinations 2017/2018

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR FIRST SEMESTER EXAMINATION FOR DIPLOMA IN MECHANICAL
ENGINEERING

MED-PR 104: ENGINEERING DRAWING I

DATE: 19/12/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

- This Examination contains two sections A and B
- Section A is compulsory
- Attempt any other two questions from section B

SECTION A: COMPULSORY

1. a) Draw a line 90mm and divide it in the ratio of 2:1:4. (5 marks)
b) Draw and name FIVE types of lines. (5 marks)
c) Draw full size in First-angle projection the following views of the bracket shown in figure 1 below.
 - i. A front view from direction A,
 - ii. An end view,
 - iii. A plan view,

All fillet radii are 3mm.

Include SIX major dimensions. (20 marks)

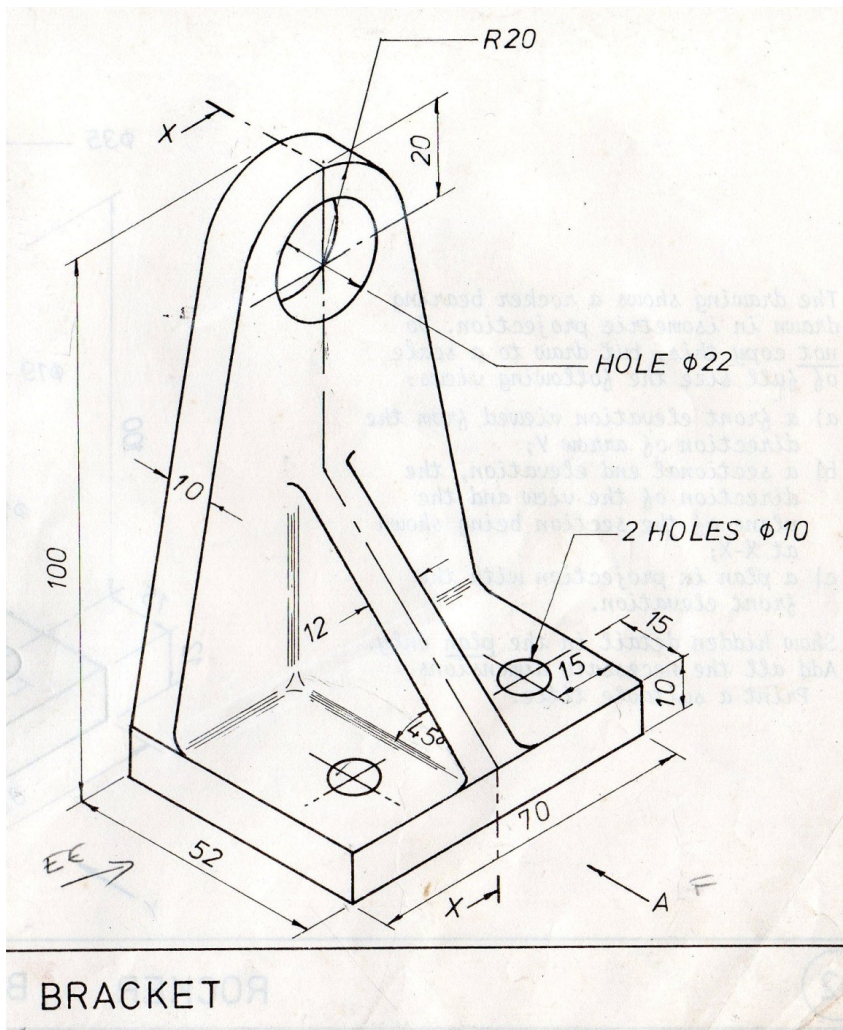


Figure 1

SECTION B: SELECT ANY TWO QUESTIONS

2.
 - a) Circumscribe a circle around a triangle ABC, where $AB = 70$ mm, $BC = 50$ mm and $CA = 60$ mm. draw a tangent at point C. (12 marks)
 - b) construct a regular heptagon in a circle of diameter 70mm (8 marks)
3.
 - a) Draw separately;
 - i. an external and
 - ii. an internal tangent to two circles of 70 mm and 50 mm diameters and 100 mm apart. (10 marks)
 - b) Sketch freehand the following workshop tools and label their parts.

- i. Ball peen hammer
- ii. Vernier caliper
- iii. Adjustable (screw) spanner
- iv. Hacksaw
- v. Flat chisel

(10 marks)

4. Draw accurately figure 2 below. (20 marks)

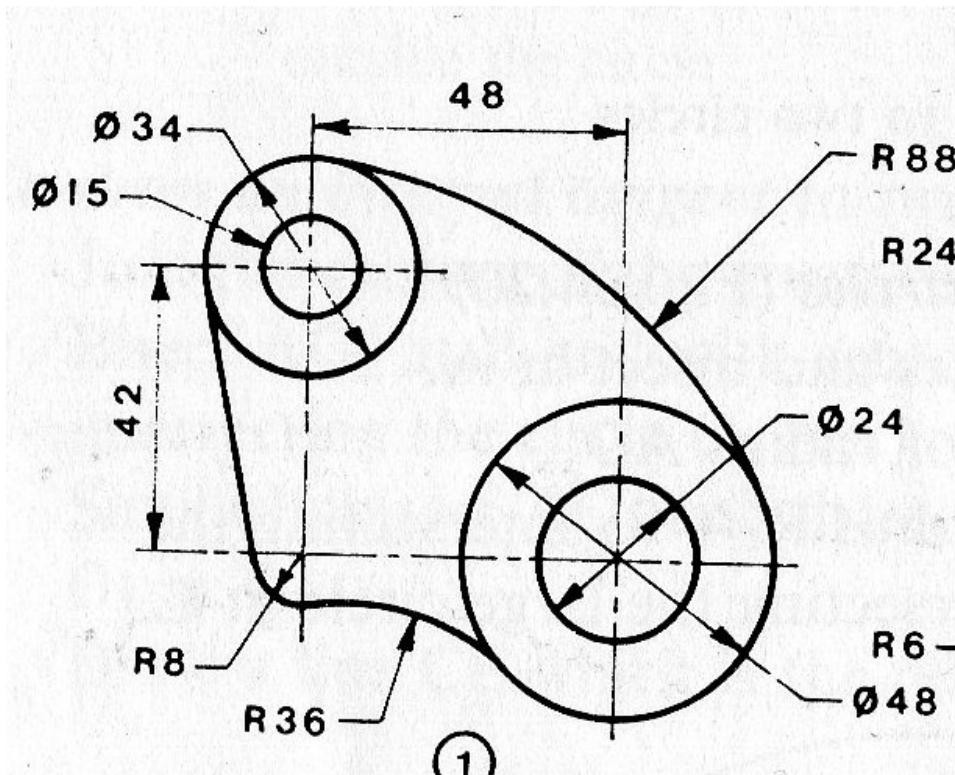


Figure 2

5. Figure 3 shows angle bracket, draw full size in third-angle orthographic projection the following views;

- i The front elevation,
- ii End elevation,
- iii Plan

(20 marks)

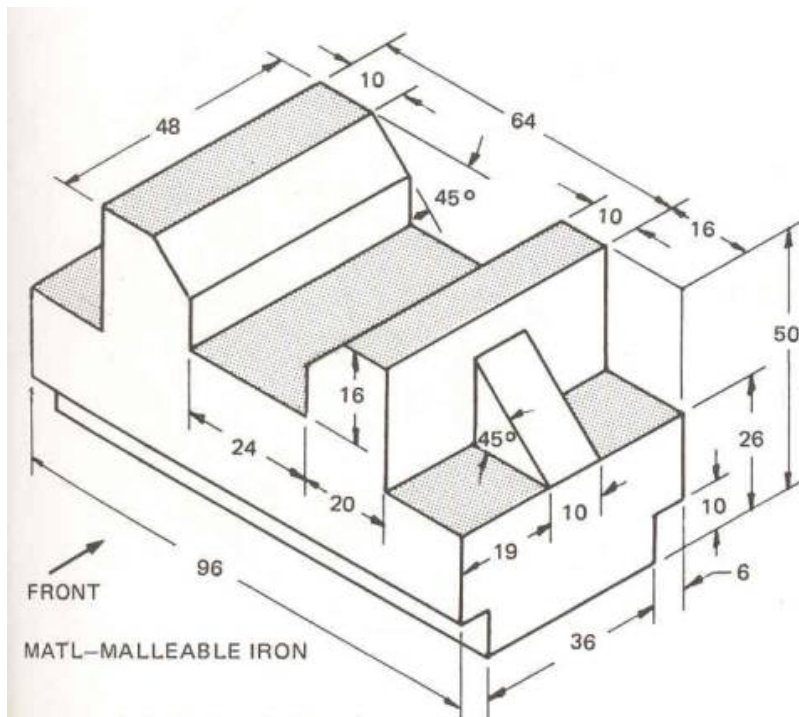


Fig. 3.

6. Draw the isometric block from the given views in figure 4 below. Take point X as the lowest point

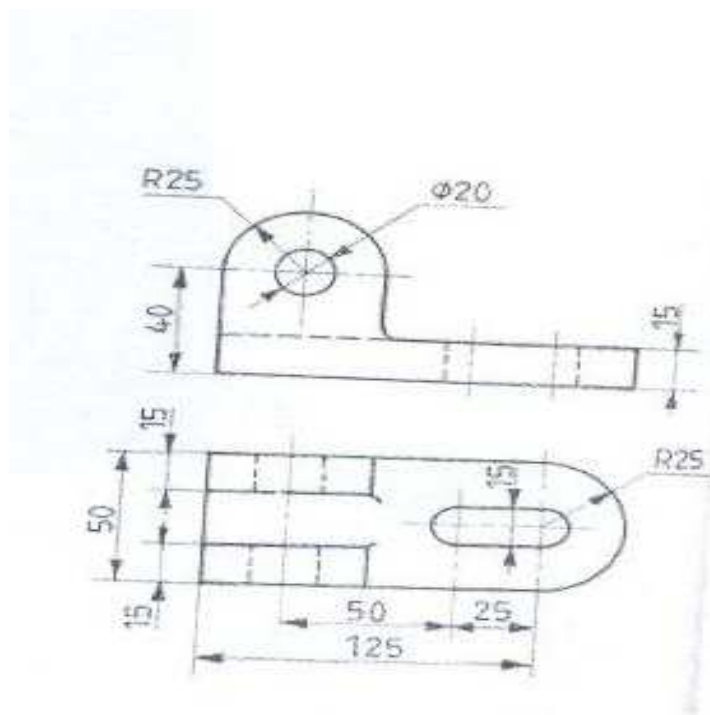


Figure 4