TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN CIVIL ENGINEERING
ECV 4111 : ENGINEERING DRAWING I

END OF SEMESTER EXAMINATION
SERIES: JANUARY 2025
TIME: 3 HOURS

Instructions to Candidates

You should have the following for this examination

-Drawing paper, examination pass and student ID

-Drawing instruments

This paper consists of five questions.

Attempt question ONE (Compulsory) and any other TWO questions

Do not write on the question paper.

QUESTION ONE (COMPULSORY) 30 Marks

a) Draw the casting shown in Figure 1 in isometric projection and dimension accordingly. (20 Marks)

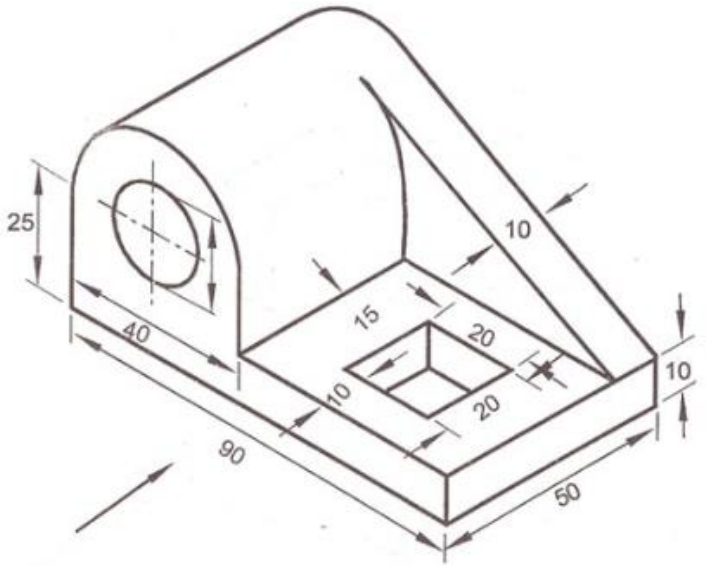

Figure 1

b) Construct the following plane figures:
   i) Regular heptagon with sides 32mm long (5 Marks)
   ii) Regular octagon inscribed in a circle of diameter 68mm (5 Marks)

ATTEMPT ANY TWO QUESTIONS

QUESTION TWO

Draw three elevations of Figure 1 in First Angle orthographic projection and label the elevations. The arrow points in the direction of the front. Do not dimension the drawing. (20 Marks)

QUESTION THREE

A rectangular lamina of 40 mm by 20 mm lies on the ground plane. One of its shorter edges is touching the Picture Plane (PP), and the longer edge is inclined at 45° to the PP. The station point is 50 mm in front of the PP, 60 mm above the Ground Plane (GP), and lies in a central plane, which is at a distance of 40 mm to the left of the shorter edge touching the PP. (20 Marks)

QUESTION FOUR

Draw a hypocycloid traced by a point on the circumference of a generating circle with a diameter of 40 mm, rolling inside a directing circle of radius 80 mm. Also, construct a normal and a tangent at any point P on the curve. (20 Marks)

QUESTION FIVE

Draw the oblique projection of a solid whose Third Angle Orthographic Projection is shown in Figure 2. Do not dimension the drawing. (20 Marks)

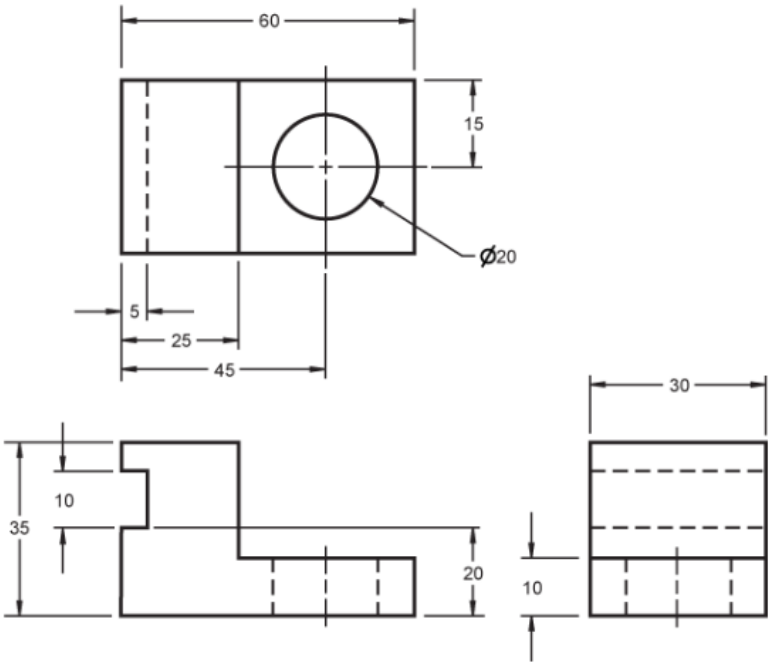

Figure 2