![International University of East Africa logo]

FACULTY OF ENGINEERING

END OF SEMESTER EXAMINATIONS - APRIL 2025

PROGRAMME: DIPLOMA IN CIVIL ENGINEERING

YEAR/SEM: YEAR 1/SEMESTER 1

COURSE CODE: DCE1105

NAME: CIVIL ENGINEERING DRAWING - DIPLOMA

DATE: 2025-04-24

TIME: 9:00AM-12:00PM

INSTRUCTIONS TO CANDIDATES:

1. Read the instructions very carefully

2. The time allowed for this examination is STRICTLY three hours

3. Read each question carefully before you attempt and allocate your time equally between all the Sections

4. Write clearly and legibly. Illegible handwriting cannot be marked

5. Number the questions you have attempted

6. Use of appropriate workplace examples to illustrate your answers will earn you bonus marks

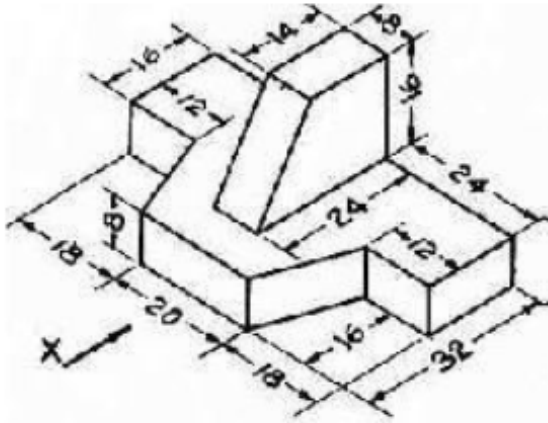7. Any examination malpractice detected will lead to automatic disqualification.

DO NOT WRITE ANYTHING ON THE QUESTION PAPER

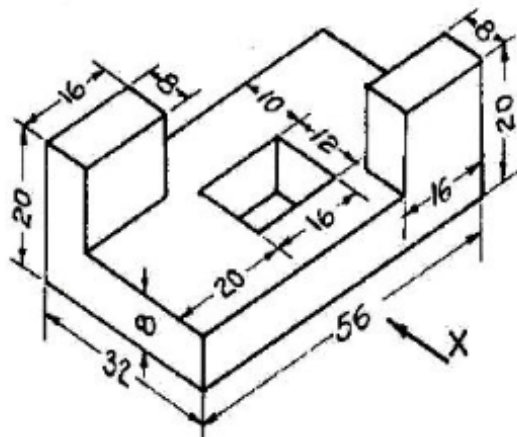# Section A Answer 2 questions from section A, all questions carry equal marks

Question 1:

Draw the front view, top view and side view of given objects below. All dimensions are in *mm*.
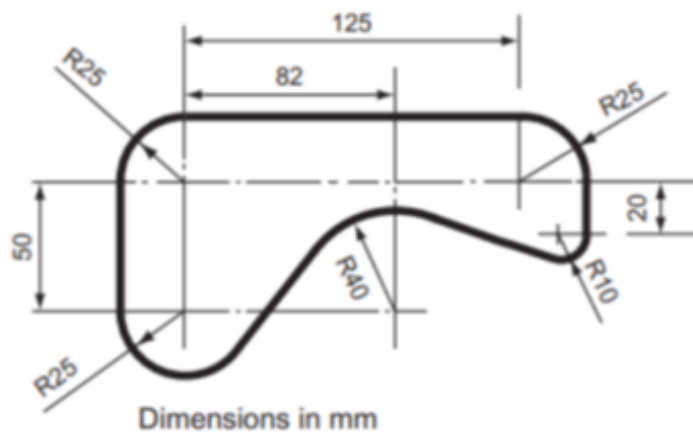
a) **(13 marks)**

b) **(12 marks)**

Question 2:

The figure below shows the outline of a metal blank. Draw the blank, full size, clearly showing the constructions for finding the exact positions of the tangents joining the arcs. **(25 marks)**


Dimensions in mm

Question 3:

a) Draw an ellipse with the distance of the focus from the directrix at 50mm and eccentricity = 2/3 (*Eccentricity method*) **(13 marks)**

b) Draw a hyperbola with the distance of the focus from the directrix at 50mm and e=3/2 (*Eccentricity method*) **(12 marks)**
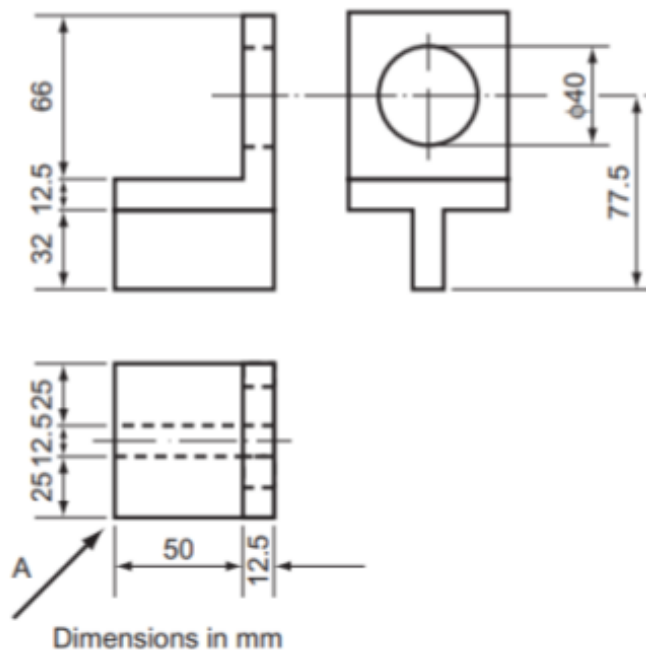
Question 4:

a) Construct a triangle with a perimeter of 170 mm and sides in the ratio of 7:3:5. **(10 marks)**

b) The figure below shows a metal blank. Draw the blank, full size, showing clearly the constructions for obtaining the tangents joining the arcs. **(15marks)**

Dimensions in mm
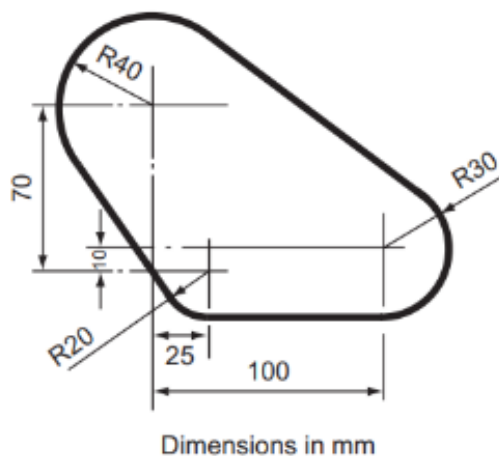
Section B Answer 2 questions from section B, all questions carry equal marks

Question 1:

Draw, full size, an isometric projection of the component shown in the following figure looking in the direction of the arrow *A*. Hidden details are not to be shown. **(25 marks)**


Dimensions in mm

Question 2:

a) Construct a triangle given the perimeter as 100 *mm* and the ratio of the sides as 4:3:6
   (5 marks)

b) Construct a regular hexagon with a diameter of 75 *mm* and construct a regular heptagon within a circle with a radius of 60 mm. The corners of the heptagon must lie on the circumference of the circle. **(7 marks)**

c) Construct a triangle with a base measuring 62 mm, an altitude of 50 *mm*, and a vertical angle of 60 °. Now draw a similar triangle with a perimeter of 250 *mm*. **(13 marks)**
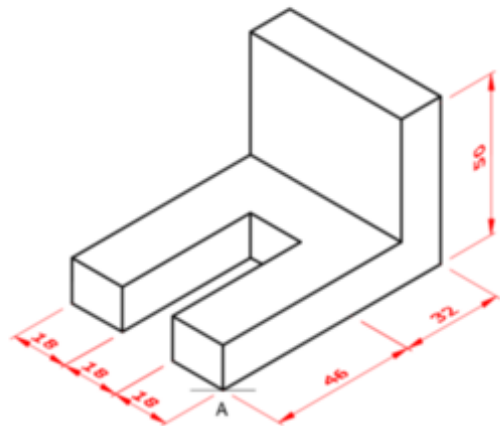
Question 3:

Produce isometric drawings of the given objects putting corner A in the foremost ground.
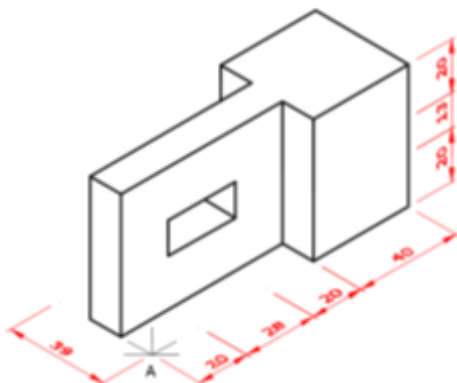
Also indicate the given dimensions. **(25 marks)**
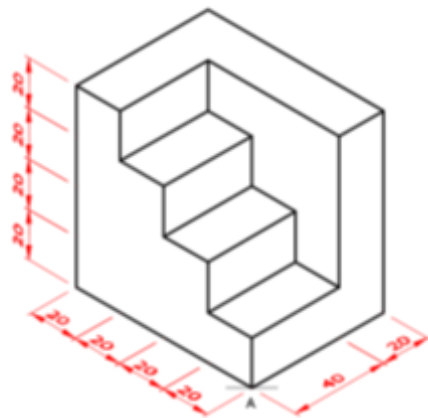
a) b)

c)

Question 4:

Draw an ellipse using any rectangle method, with Major axis: 100mm and Minor axis: 70mm. **(25 marks)**