

1503/104

1509/104

TECHNICAL DRAWING

June/July 2020

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**CRAFT CERTIFICATE IN AUTOMOTIVE ENGINEERING
CRAFT CERTIFICATE IN CONSTRUCTION PLANT ENGINEERING**

MODULE I

TECHNICAL DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Drawing instruments;

Drawing papers.

This paper consists of THREE sections; A, B and C.

Answer Question 1 (compulsory) and then answer TWO questions from section B and TWO questions from section C.

Maximum marks to each part of a question are indicated.

All dimensions are in millimeters.

Candidates should answer the questions in English.

This paper consists of 6 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A

(Compulsory)

1. Figure 1 shows a pictorial view of a machine block. Draw the following views in first angle projection.

- (a) A sectional front elevation X-X;
- (b) An end elevation in the direction of arrow E;
- (c) A plan from arrow P.

- Include six major dimensions;
- Show hidden details.

(40 marks)

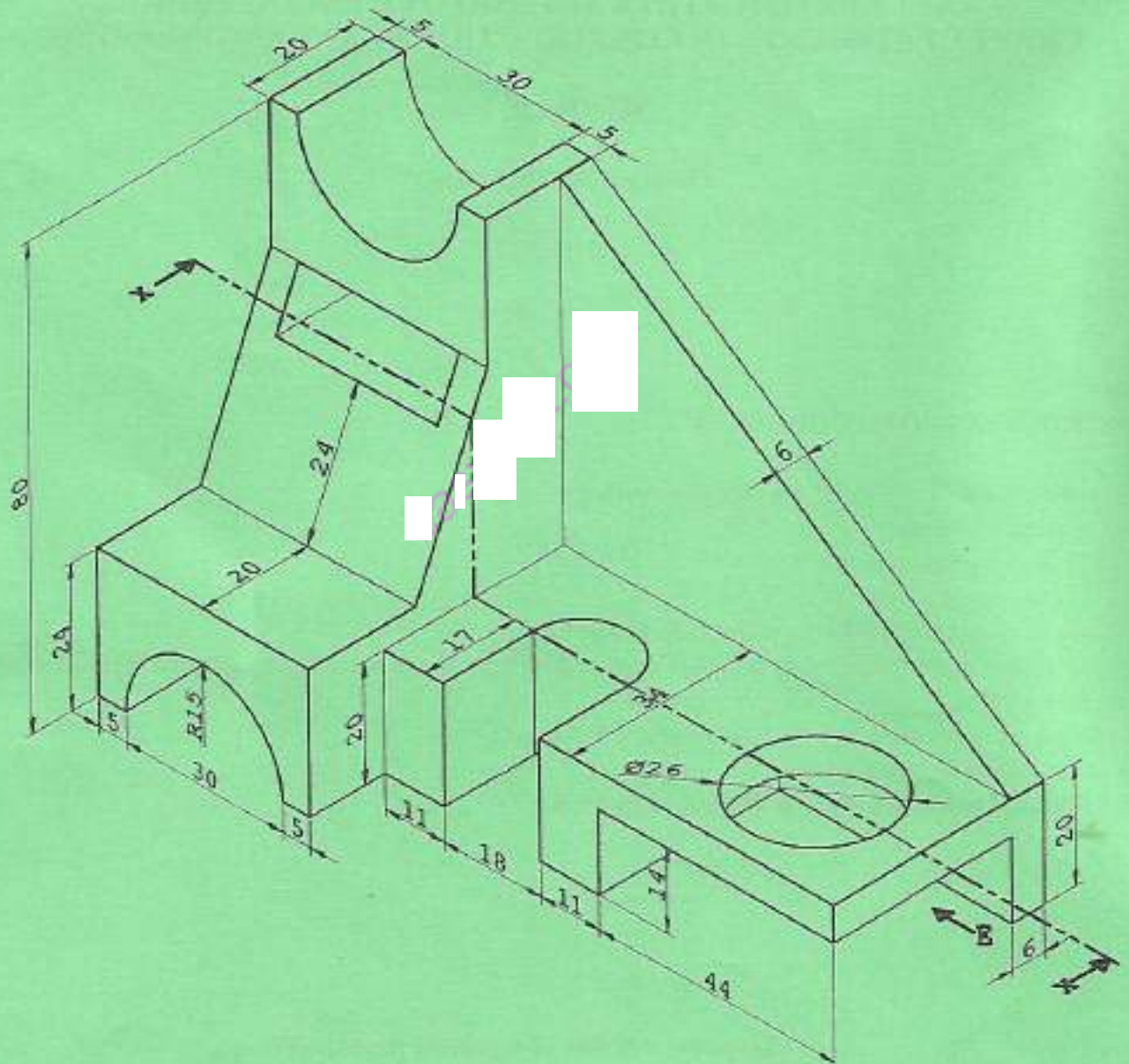


Fig. 1

SECTION B

Answer **TWO** questions from this section.

2. (a) Construct an ellipse with a minor diameter of 60 mm and a major diameter of 100 mm. (7 marks)
- (b) Construct the locus of a point on a circle of radius 25 mm when the circle rolls on a flat surface for one revolution without slipping. Name the locus. (8 marks)
3. (a) Copy the template shown in figure 2 and enlarge it to a scale of $\frac{8}{5}$ using P as the centre of similitude. (8 marks)

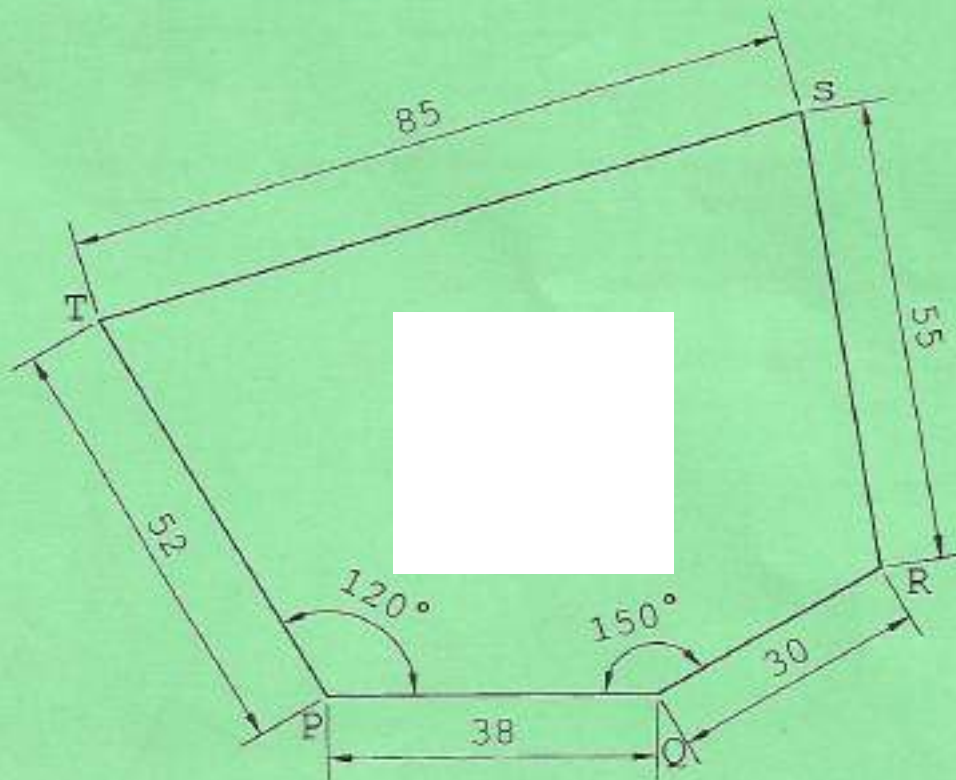


Fig 2.

(b) Construct a square equal in area to the given triangle ABC shown in figure 3

(7 marks)

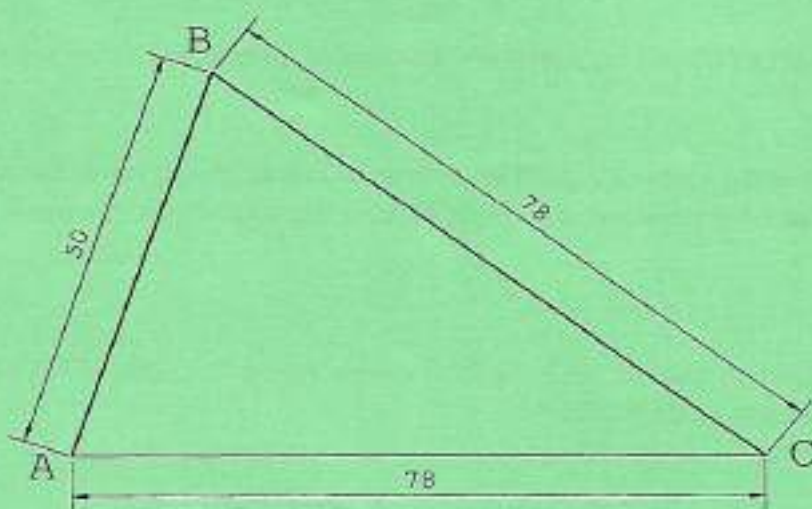


Fig 3.

4. Figure 4 shows the intersection of a cylinder and a square pipe. Copy the given views and:

(a) Complete the front and the plan elevations.

(10 marks)

(b) Draw the surface development of the square pipe.

(5 marks)

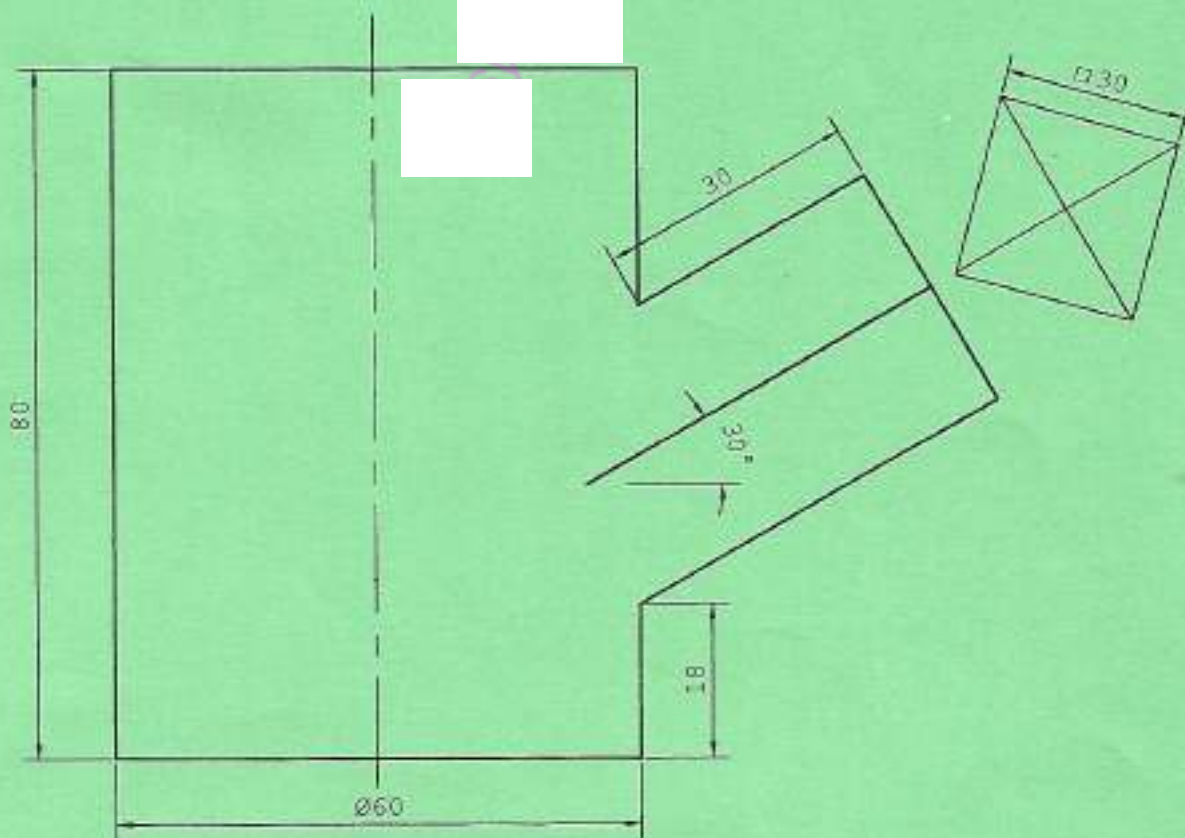


Fig 4

SECTION C

Answer any **TWO** questions from this section.

5. Figure 5 shows orthographic views of a bearing support bracket. Draw full size, and isometric view of the block with corner X the lowest point. (15 marks)

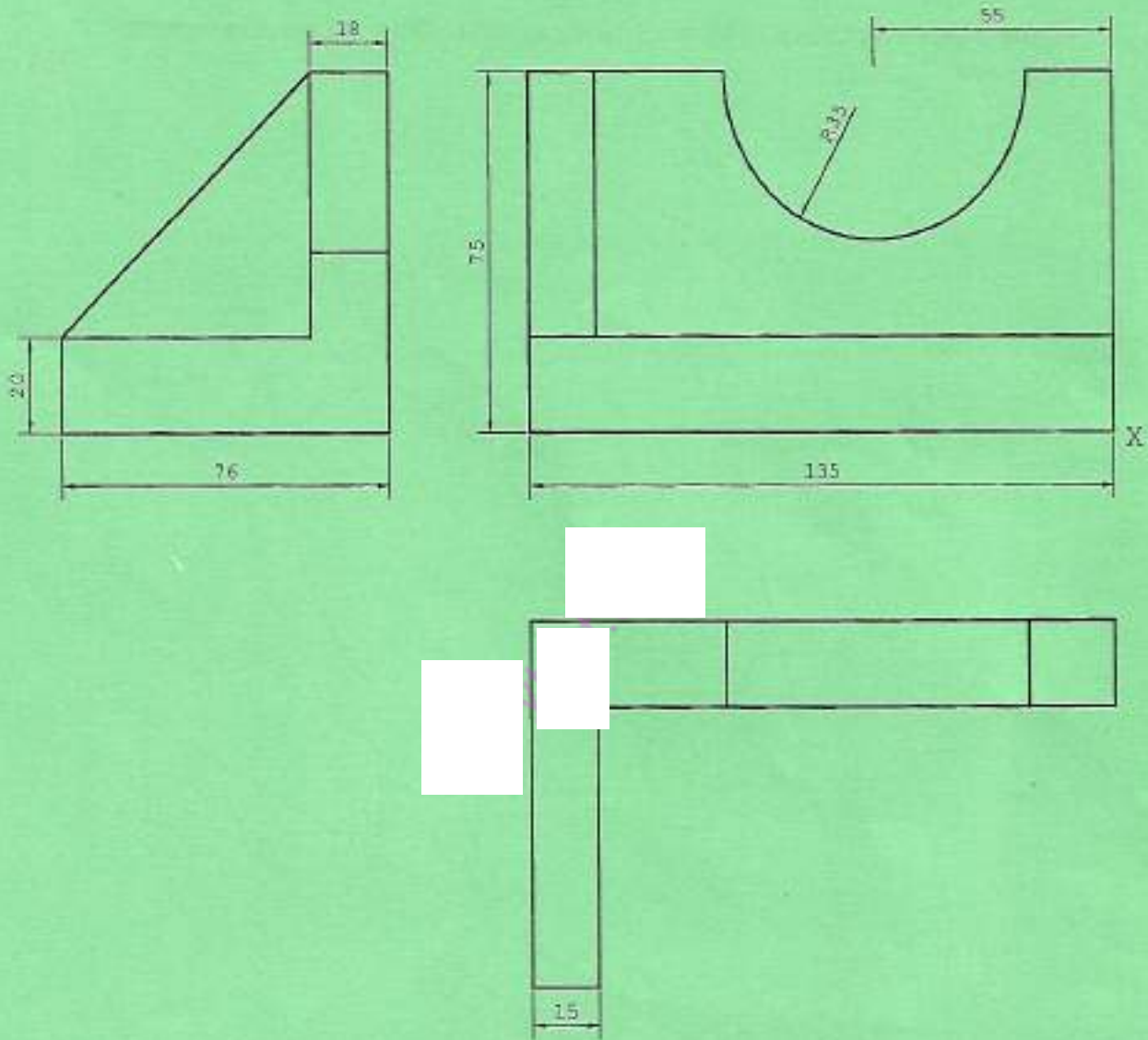


Fig. 5

6. Sketch the following tools:

(a) Set hammer;

(5 marks)

(b) flat chisel;

(5 marks)

(c) hatchet soldering iron.

(5 marks)

7. Figure 6 shows a pictorial view of a bearing support. Draw the block in isometric projection.

(15 marks)

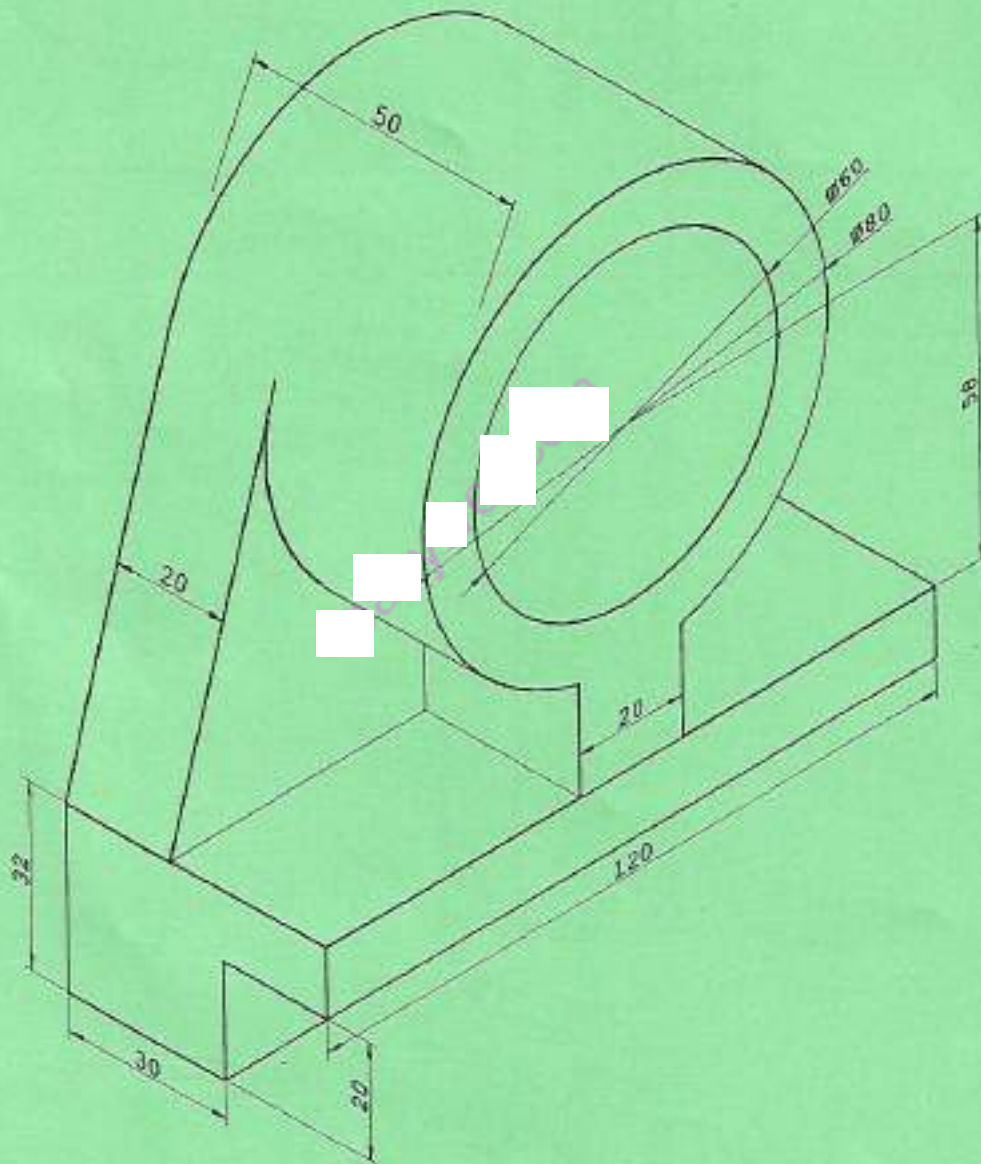


Fig. 6

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