

1503/104
TECHNICAL DRAWING
June/July 2017
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
CRAFT CERTIFICATE IN AUTOMOTIVE ENGINEERING
MODULE I

TECHNICAL DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination

Drawing instruments;

A3 drawing papers.

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

*Answer a total of **FIVE** questions as follows:*

*Answer **question 1** (compulsory) in section **A**, **TWO** questions from section **B** and **TWO** questions from section **C.***

Maximum marks in each question are indicated.

All dimensions are in millimetres.

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

This question is compulsory.

1. Figure 1 shows an isometric view of a machine block. Draw the following views in 1st angle projection:

- (a) Front elevation in the direction of arrow F;
 - (b) an end view;
 - (c) a plan.
- indicate six major dimensions.
- show all the hidden details.

(40 marks)

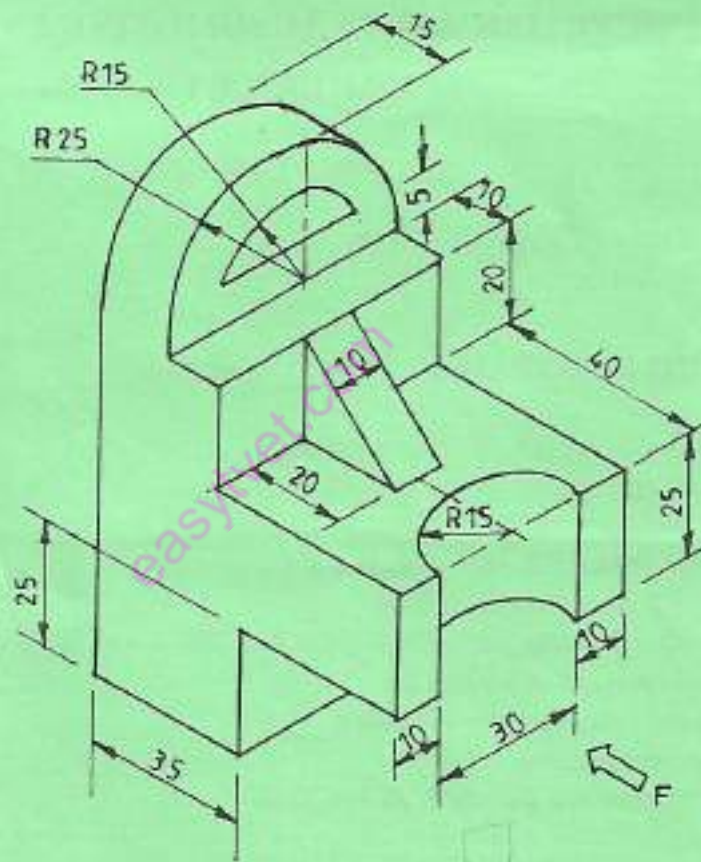
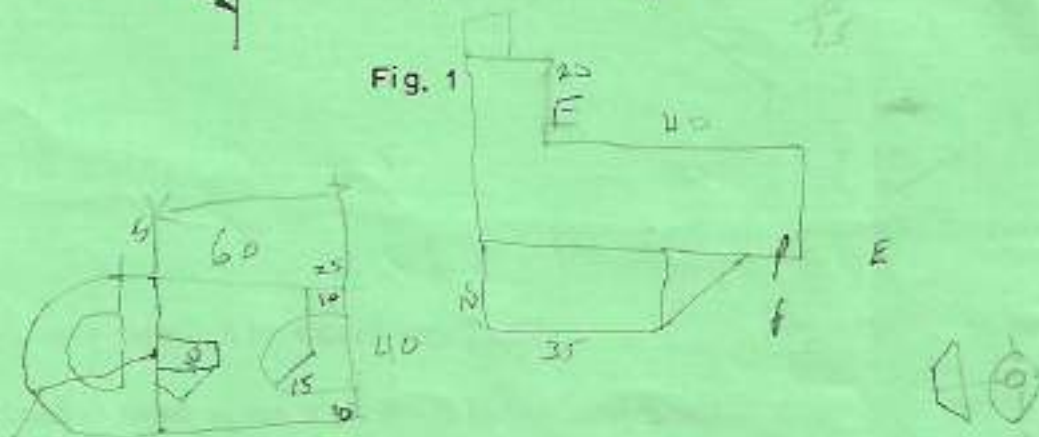


Fig. 1



SECTION B

Answer any TWO questions from this section.

2. Figure 2 shows a metallic template ABCDE. Draw the template such that the new area is $\frac{4}{7}$ of the original area. Take A to be the centre of reduction. (15 marks)

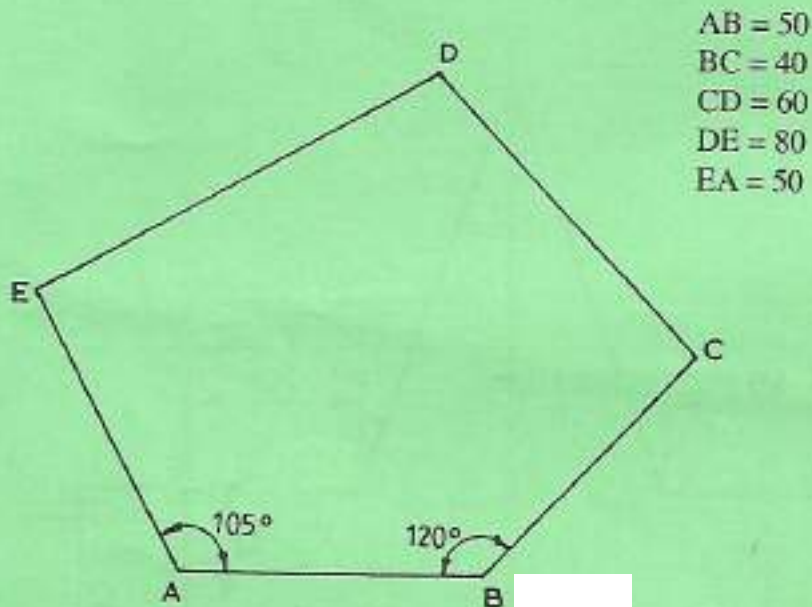


Fig. 2

3. Draw a parabola with an eccentricity of $\frac{1}{2}$ given the relative positions of the focus and the directrix as 20 mm apart. Plot up to a distance of 80 mm. (15 marks)

10ex Code

4. Figure 3 shows a cone intersected diametrically by two pipes of equal diameter, on both sides. Copy the given view and:
- complete the front elevation and the plan showing the line of intersection.
 - draw the surface development of pipe B.

(15 marks)

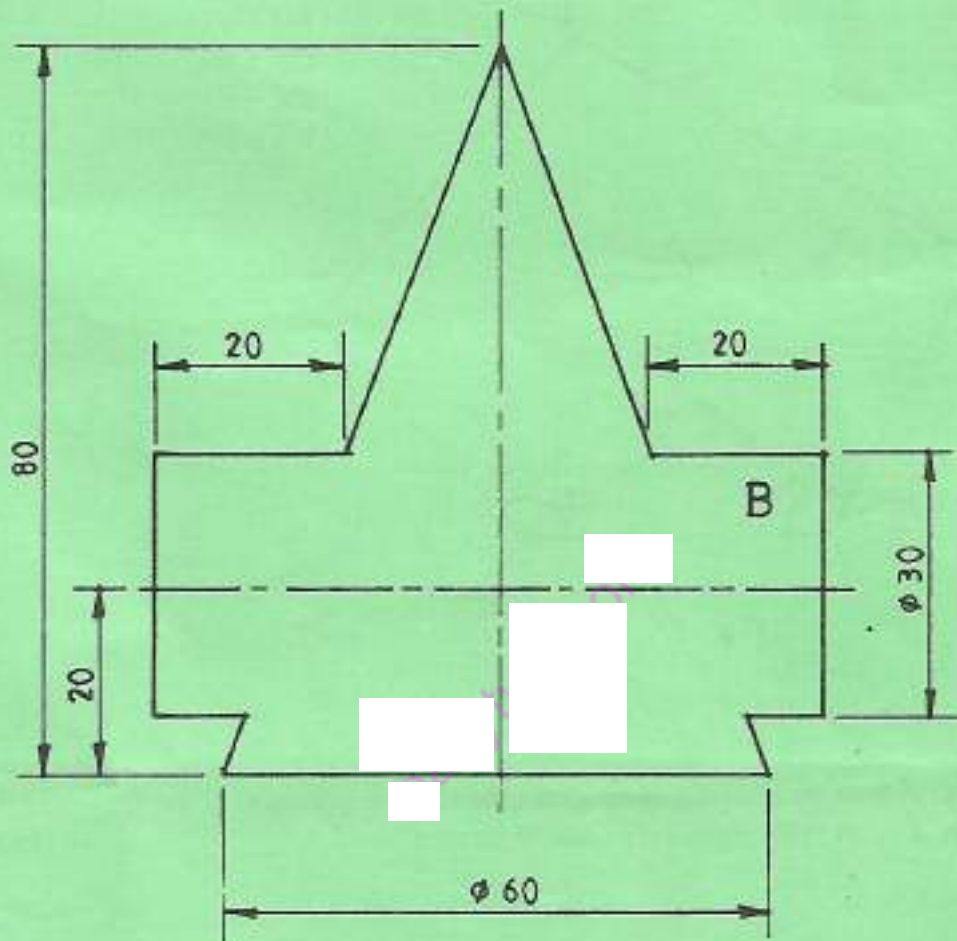


Fig. 3

SECTION C

Answer any TWO questions from this section.

5. Figure 4 shows two orthographic views of a machine block. Draw the block in isometric projection with corner R as the lowest point. (15 marks)

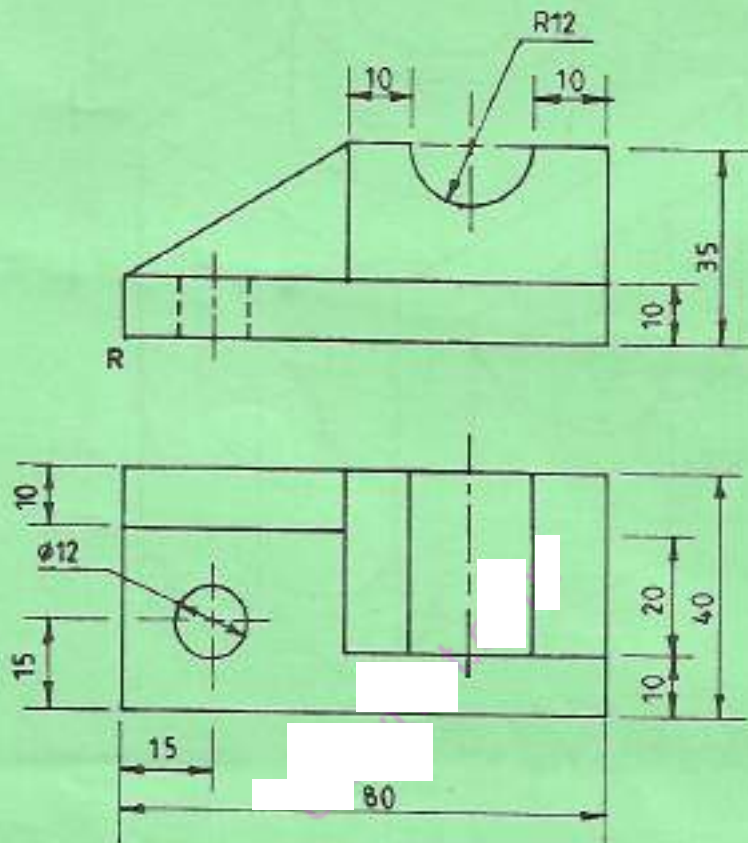


Fig. 4

6. Sketch the following:
- (a) pop rivet; (3 marks)
 - (b) poppet valve; (3 marks)
 - (c) snap ring pliers (external); (4 marks)
 - (d) spark plug. (5 marks)

7. Figure 5 shows a pictorial view of a yoke. Draw half size the yoke in isometric projection. (15 marks)

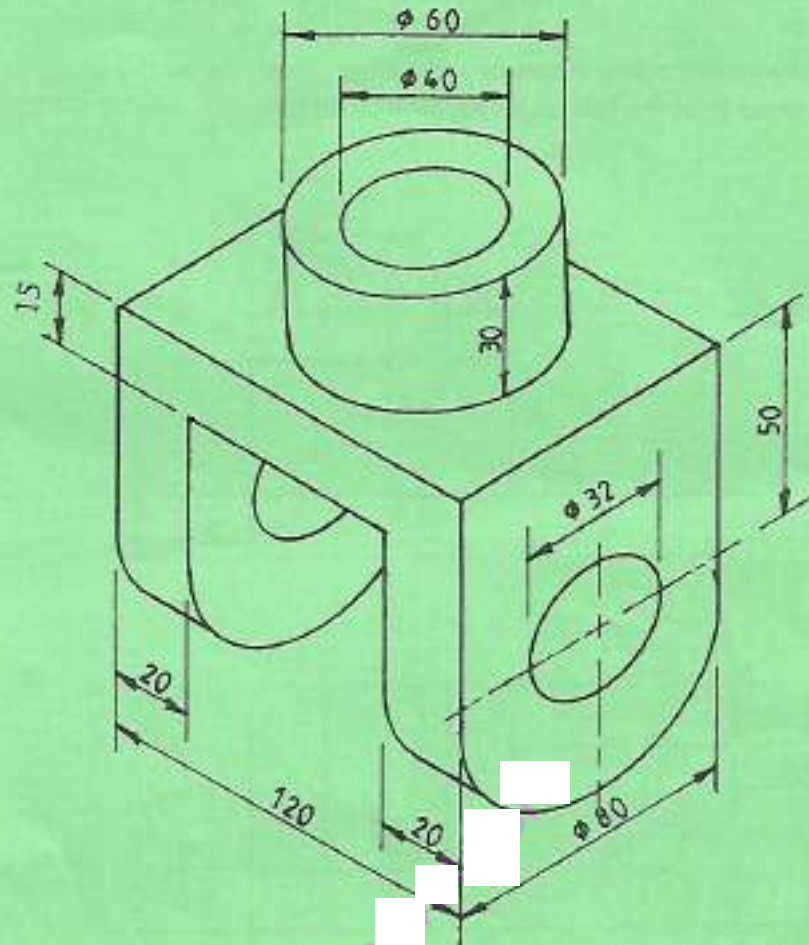


Fig. 5

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