2506/104
2507/104
ENGINEERING DRAWING
March/April 2024
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AERONAUTICAL ENGINEERING (AIRFRAMES AND ENGINES OPTION) (AVIONICS OPTION)

MODULE I

ENGINEERING DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:
- *Answer booklet;*
- *Non-programmable scientific calculator;*
- *Drawing papers size A3;*
- *Drawing instruments;*
- *Drawing table/board.*

*This paper consists of **FIVE** questions in **TWO** sections; **A** and **B**.*
*Answer question **ONE** in Section **A** (**COMPULSORY**) and **THREE** questions from Section **B**.*
Maximum marks for each part of a question are as 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.

Turn over

SECTION A (COMPULSORY) 40 marks

1. Figure 1 shows parts of a V-block.
Parts K of the clamp slide in the slots S of the V-block.
The clamp is to be centrally positioned on the block and fully closed.
Draw full size, in first angle projection the:
(a) sectional front elevation on cutting plane P - P;
(b) end elevation from the left hand side;
(c) plan.
Include a parts list and any **four** dimensions. (40 marks)

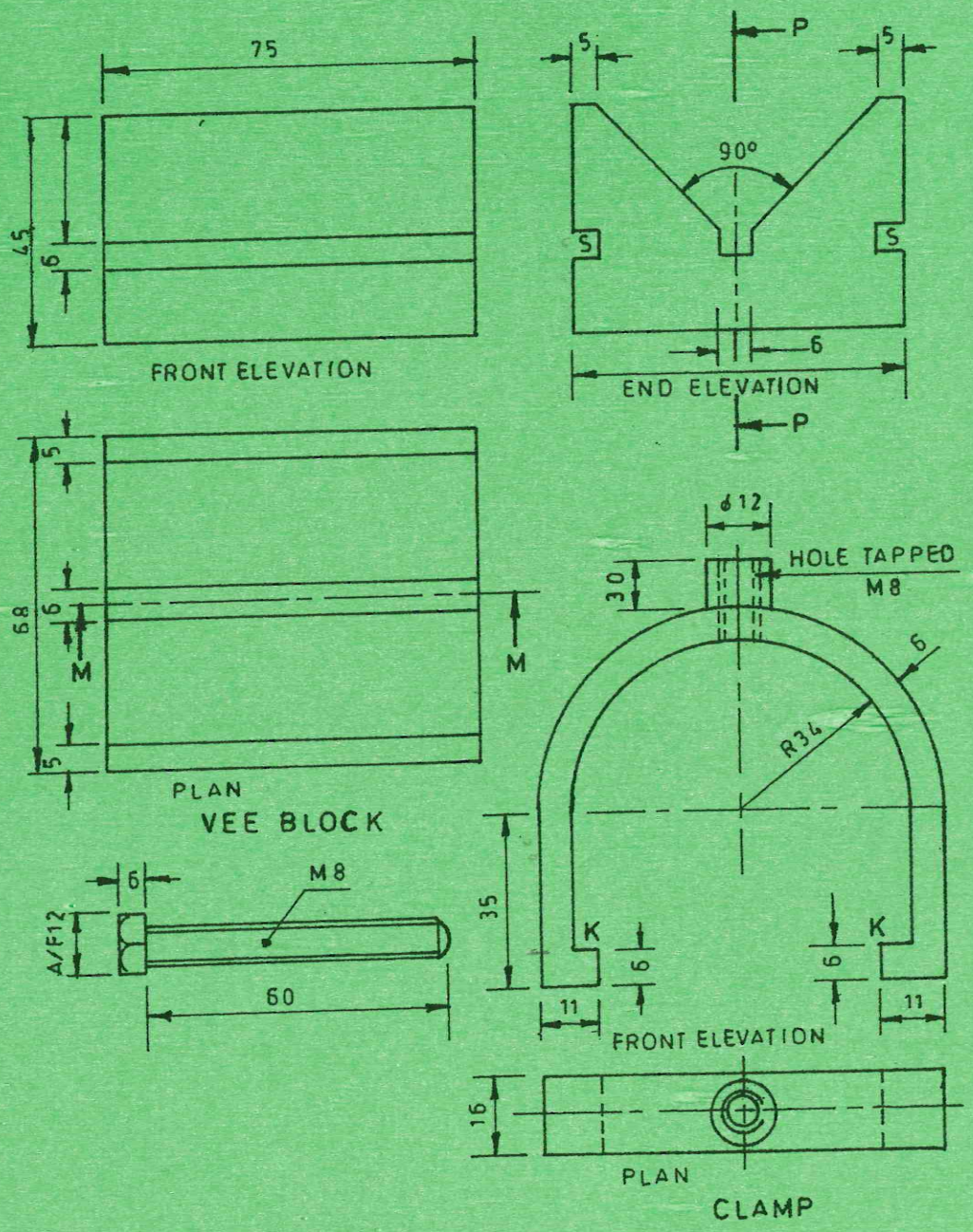

Fig.1

SECTION B (60 marks)

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

2. (a) Construct a hyperbola given the distance between the focus and directrix as 50 mm and eccentricity as 3 by 2.

Draw a tangent and normal at any point on the hyperbola.

(20 marks)

3. Figure 2 shows two pipes of equal diameters 60 mm intersecting at 30°.
Draw full size, the following:

(a) given view with line of penetration;
(b) complete plan;
(c) development of pipe J.

(20 marks)

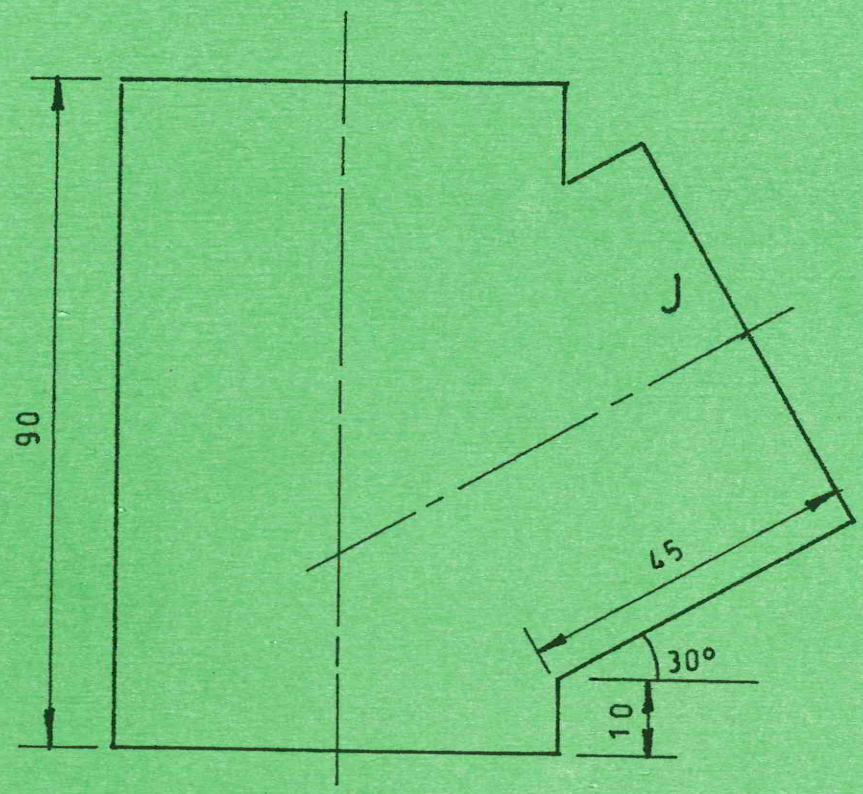

Fig. 2

4. (a) Describe **three** types of pictorial projections used in engineering drawing. (6 marks)

(b) Two views of an object drawn in first angle projection, are shown in figure 3.

(i) Draw the views and project the left hand view.
(ii) Produce an oblique view taking edge X as the lowest.

(14 marks)

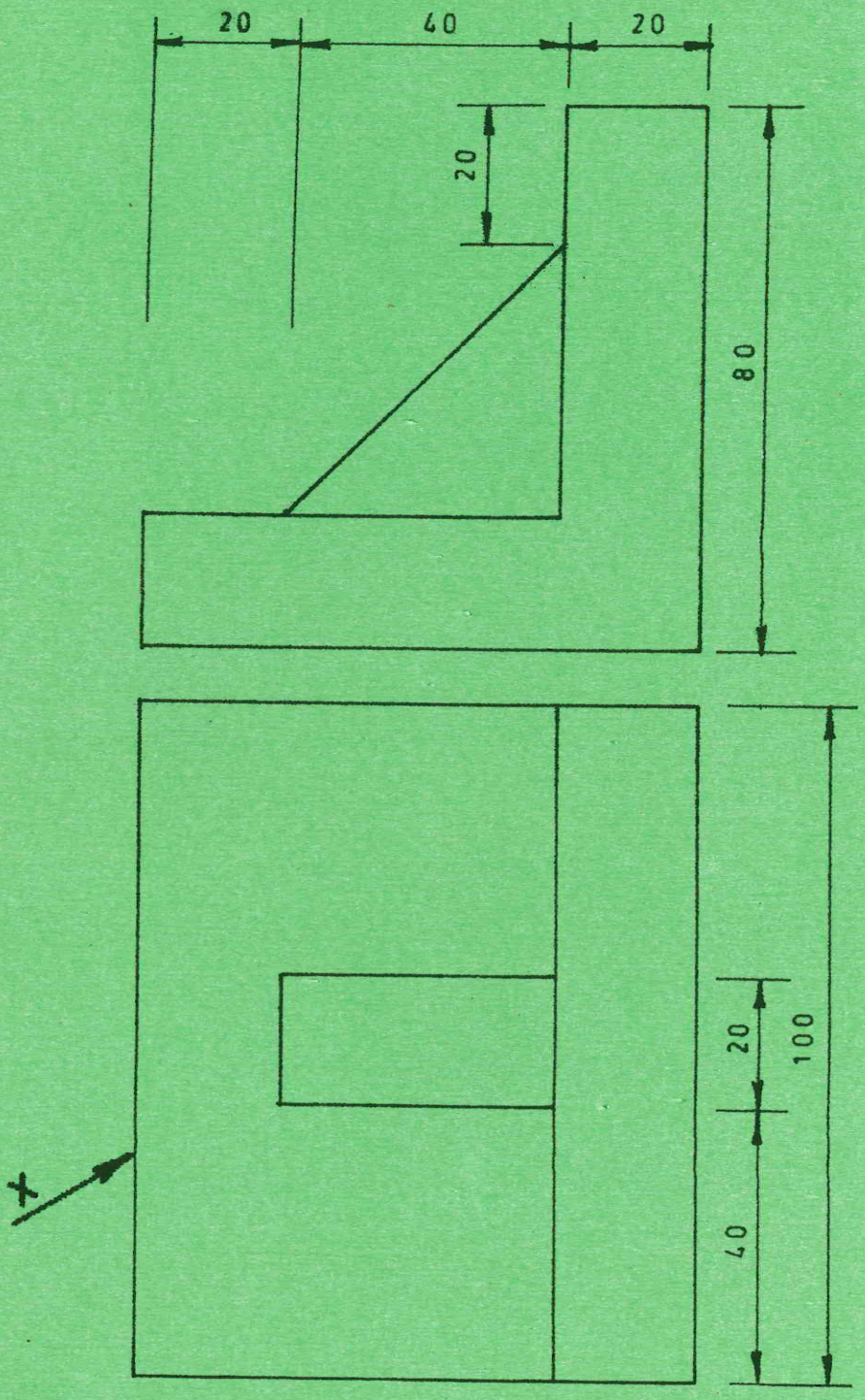

Fig. 3

5. Figure 4 shows a hexagonal pyramid whose base is drawn in a circle of diameter 60 mm and a vertical height of 80 mm.

Copy the given view and draw the following views in 1st angle projection:

(a) complete plan;
(b) an auxiliary view seen from arrow Y.

(20 marks)

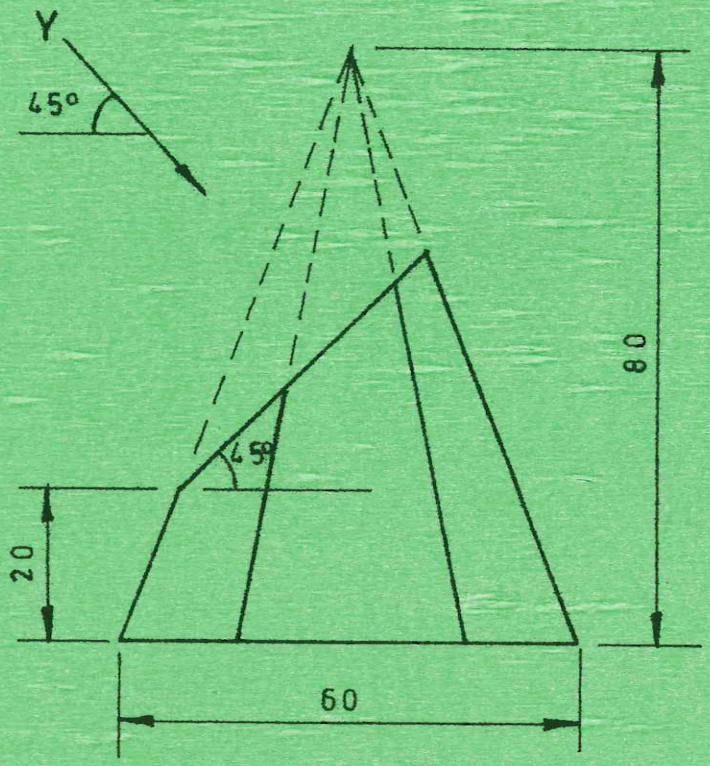

Fig. 4

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