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1602/104
TECHNICAL DRAWING I
Oct./Nov. 2018
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN ELECTRICAL AND ELECTRONIC TECHNOLOGY
(POWER OPTION)
(TELECOMMUNICATION OPTION)

MODULE I

TECHNICAL DRAWING I

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

- *Answer booklet;*
- *Drawing instruments;*
- *Computer installed with AutoCAD, electronic CAD software;*
- *Printer;*
- *Printing paper.*

*Answer any **FIVE** of the **EIGHT** questions in the answer booklet provided.*
All questions carry equal marks.
Maximum marks for each part of a question are as indicated.
All dimensions are in millimetres.
Candidates should answer the questions in English.

This paper consists of 10 printed pages.

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

1. Figure 1 shows three views of an object drawn in first angle projection. Draw full size an oblique cabinate projection with corner Z as the lowest point. (20 marks)

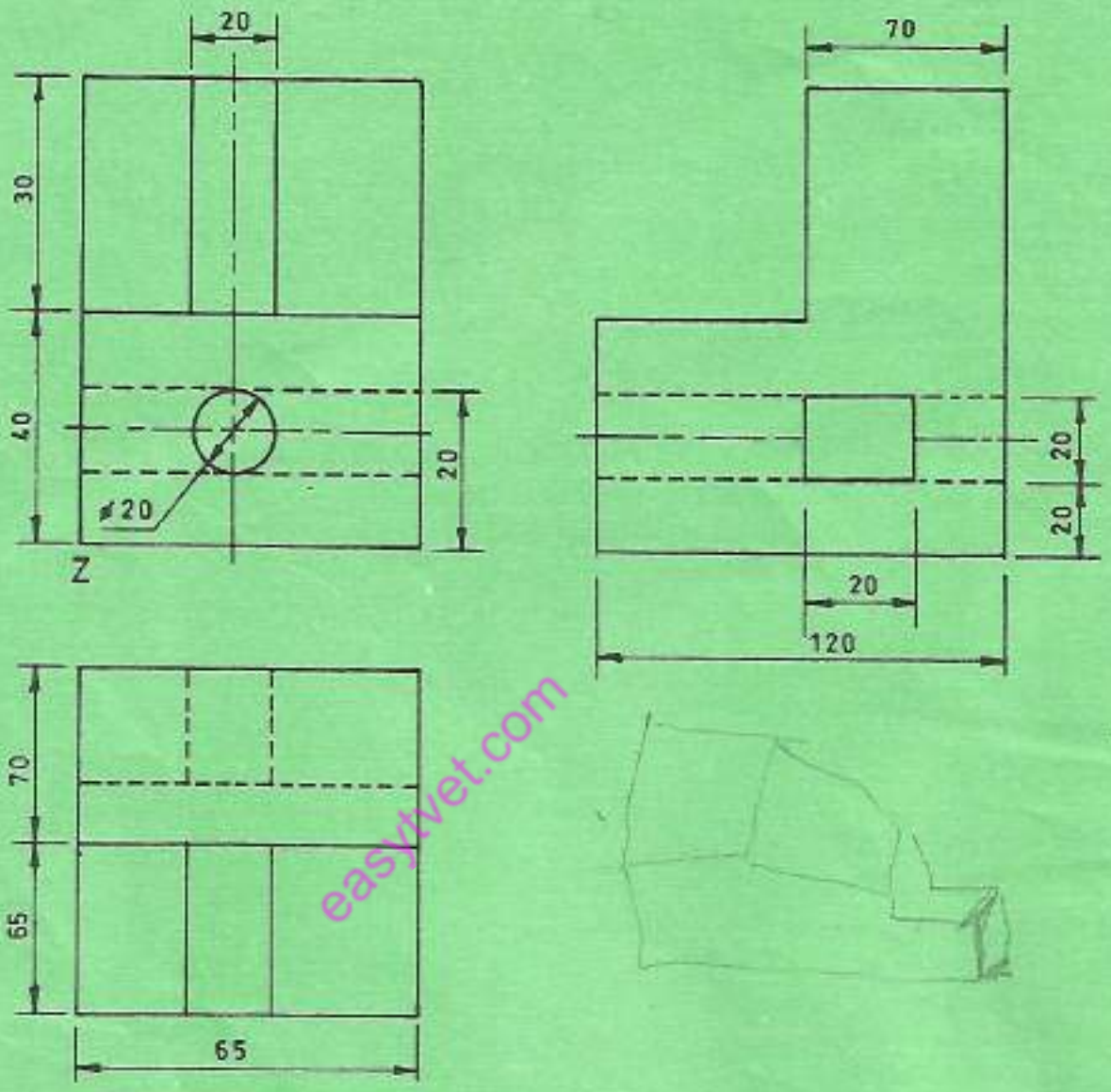

Fig. 1

2. (a) Construct a triangle whose perimeter is 130 mm and its sides are in the proportion of 4:5:4. (6 marks)

(b) Draw the internal tangent to two similar circles of diameters 45 mm and their centres 65 mm apart. (6 marks)

(c) Using the trammel method, construct an ellipse given the major axis as 165 mm and minor axis 120 mm. (8 marks)

3. Figure 2 shows a labelled plan of a house. Make a key and label:

(a) the building symbols labelled A-F;

(b) electrical symbols shown.

(20 marks)

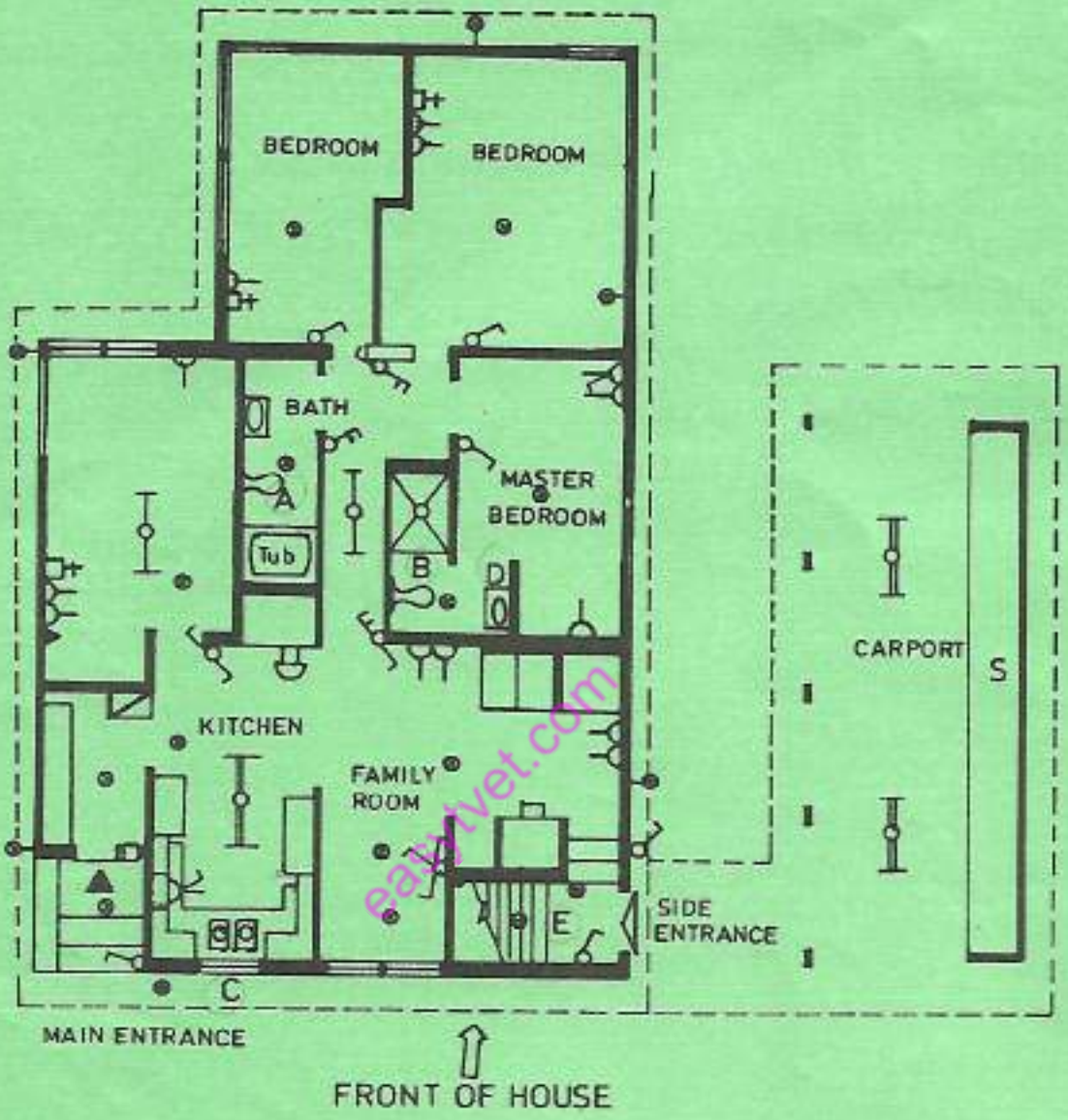

Fig. 2

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4. Figure 3 shows the elevation of a truncated cylinder. Copy the elevation and draw the:

(a) plan;
(b) true shape;
(c) end elevation in the direction of arrow E;
(d) surface development. (20 marks)

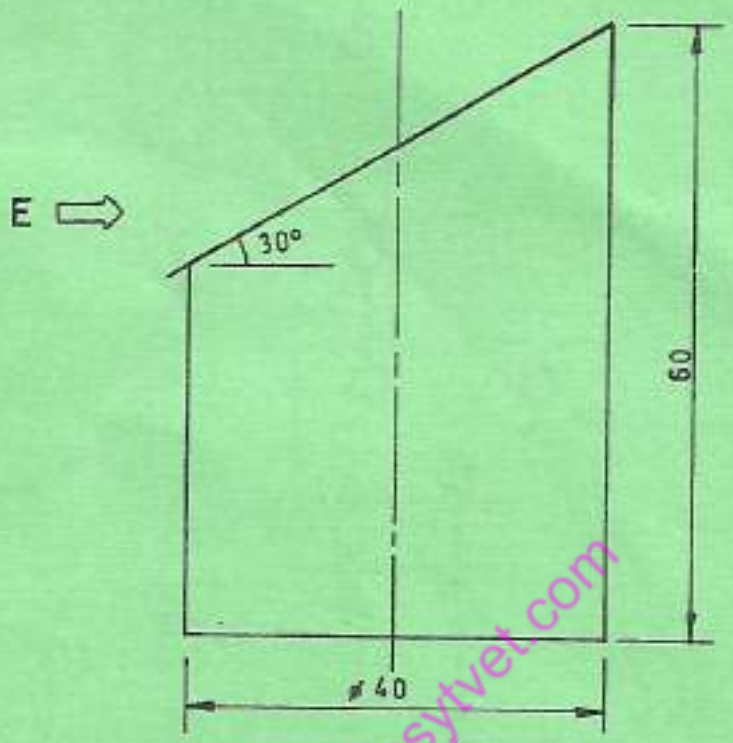


Fig. 3

5. (a) Figure 4 shows a printed circuit board (PCB) layout of an electronic circuit. Draw a schematic diagram of the circuit and label all the components. (8 marks)

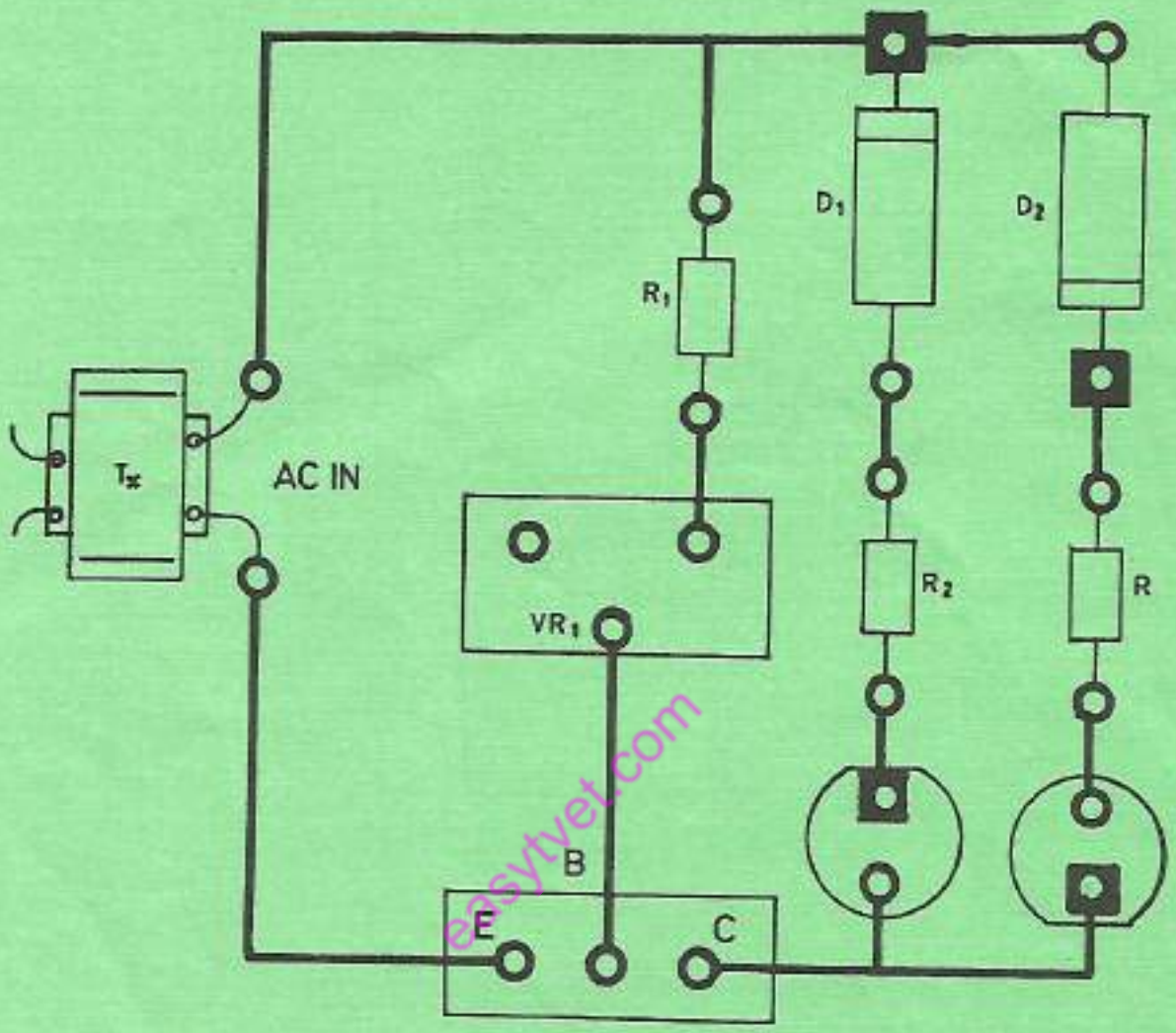


Fig. 4

(b) Figure 5 shows a two dimensional figure. Using AutoCAD, copy the figure, print and handover the hard copy. (12 marks)

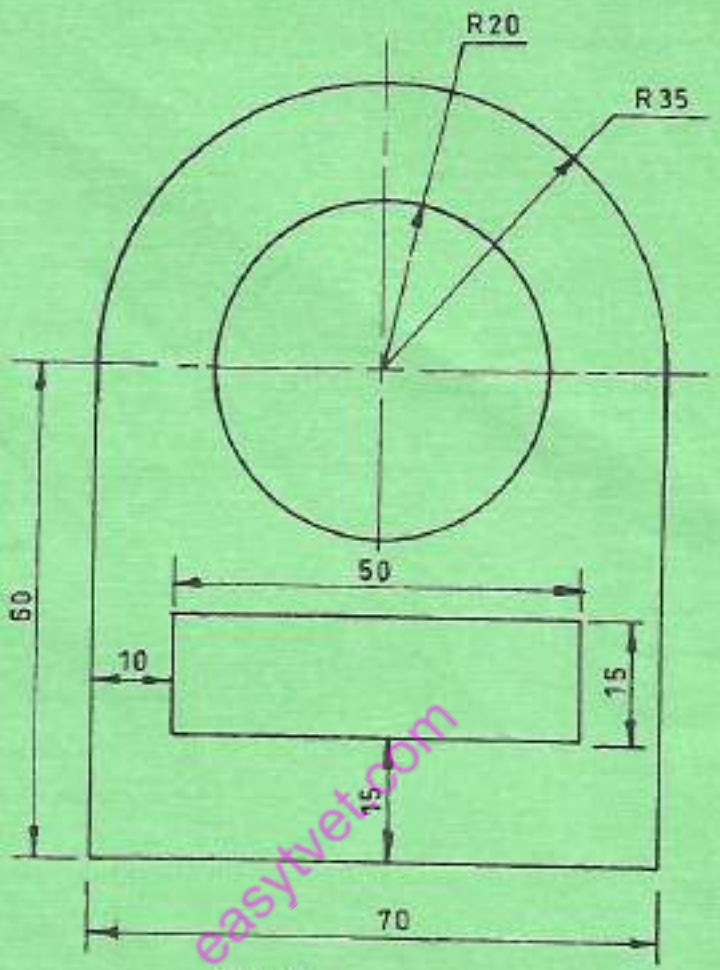


Fig. 5

6. Figure 6 shows the pictorial drawing of an object. Draw full size in third angle projection the following:

(a) plan;
(b) front elevation;
(c) sectional end elevation.

(20 marks)

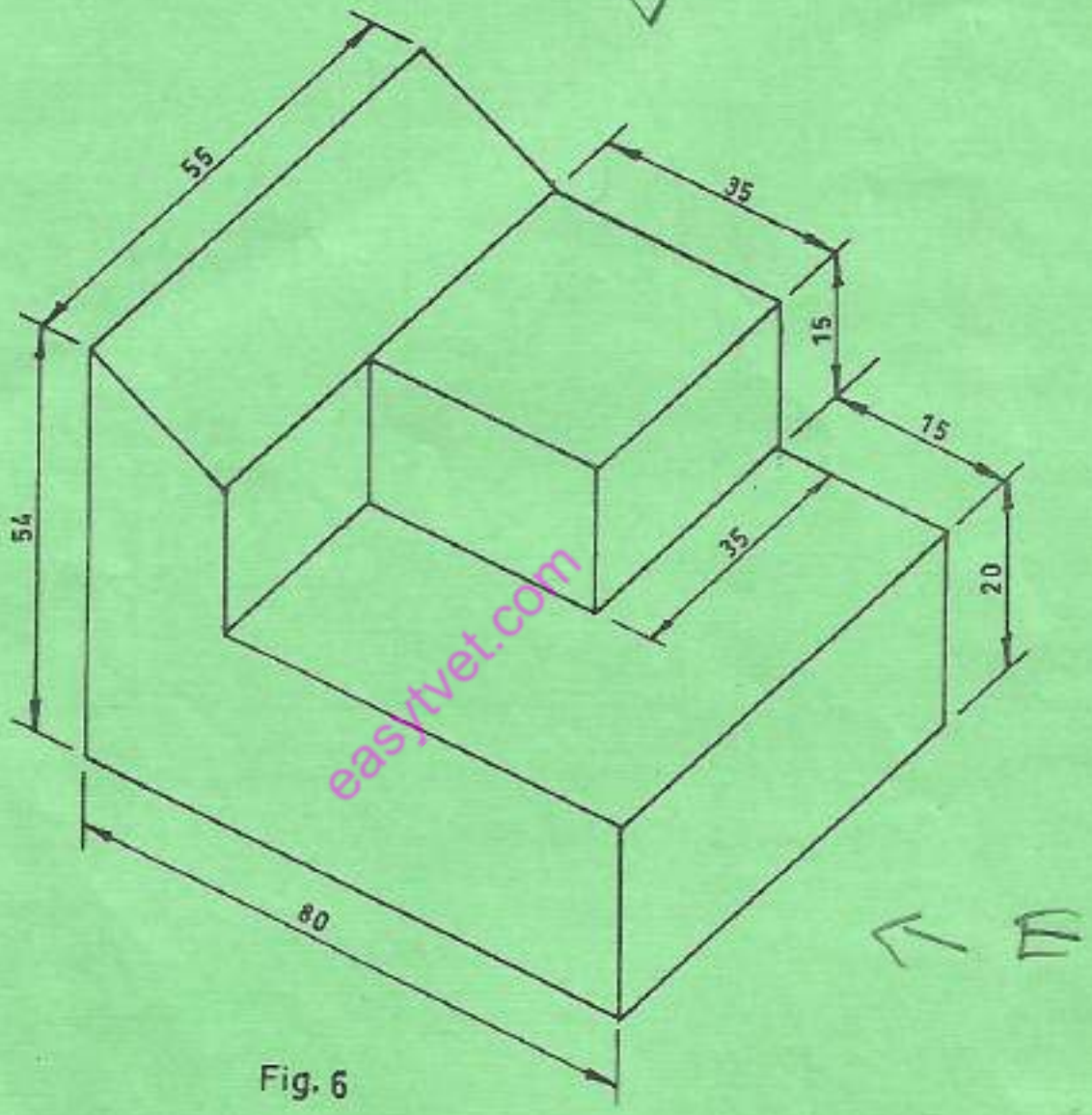


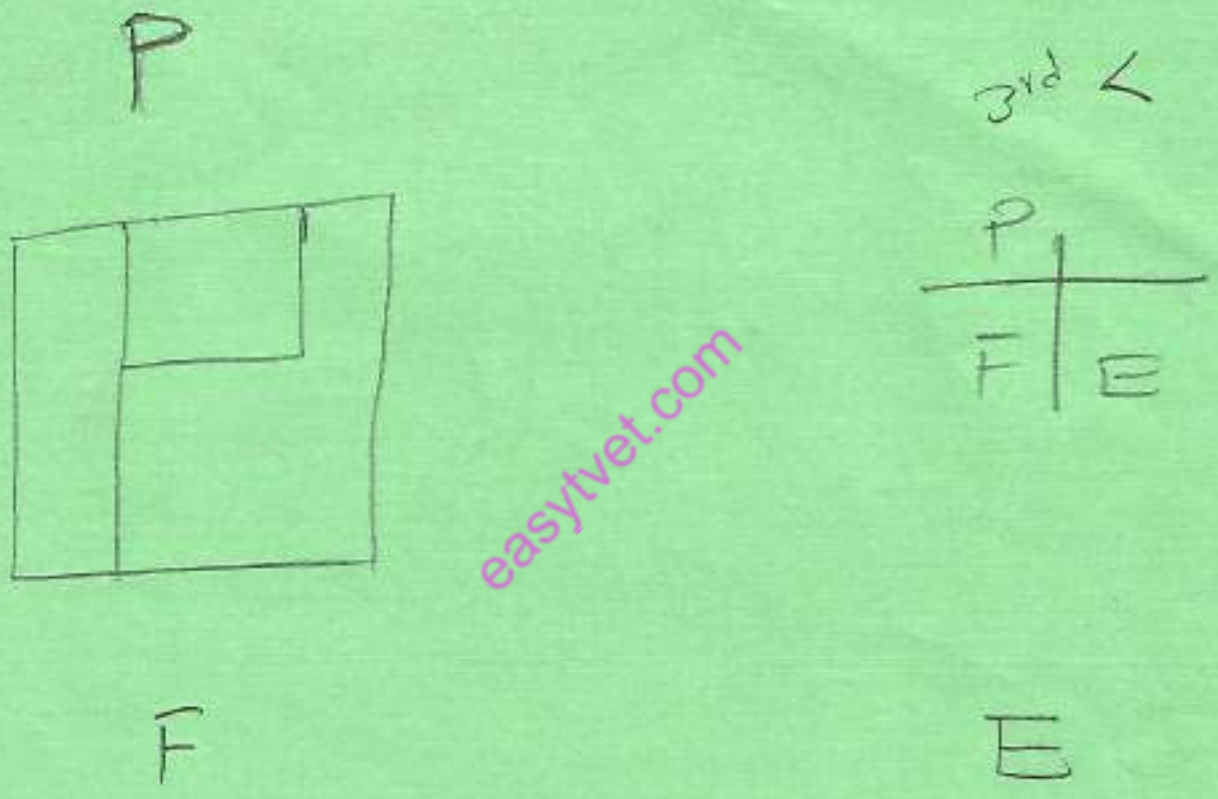
Fig. 6

7. (a) Using free hand, sketch each of the following:

(i) ball pein hammer;
(ii) combination pliers;
(iii) soldering gun;
(iv) spirit level;
(v) three pin plug.

(15 marks)

(b) Draw a circuit diagram of two lamps connected in parallel and operated by two-two way switches and an intermediate switch. (5 marks)



8. Figure 7 shows a pictorial view of a machined block. Draw to full size the following views in first angle projection, the:

(a) front elevation in the direction of arrow F;
(b) plan.

Insert **six** major dimensions and hidden details. (20 marks)

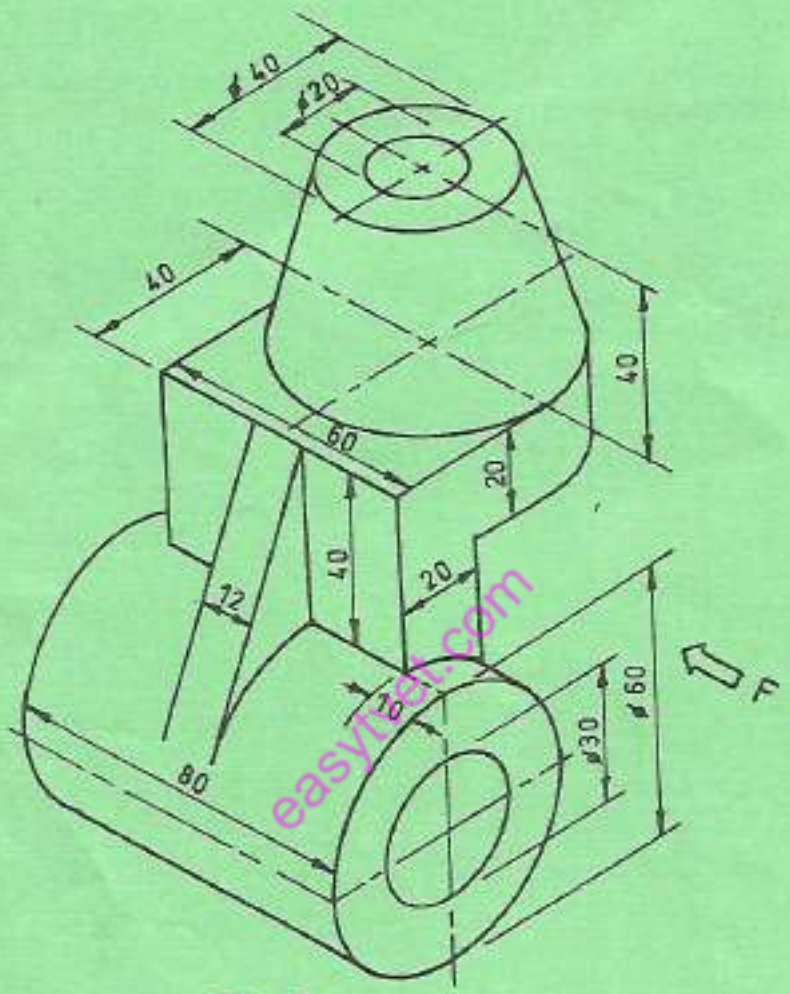


Fig. 7

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