1601/104
1602/104
TECHNICAL DRAWING I
June/July 2016
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN ELECTRICAL AND ELECTRONIC ENGINEERING (POWER OPTION) (TELECOMMUNICATION OPTION) MODULE I

TECHNICAL DRAWING I

3 hours

INSTRUCTIONS TO THE CANDIDATE

You should have the following for this examination:

Drawing instruments;
Drawing papers.

*Answer any **FIVE** of the following **EIGHT** questions.*
***ALL** questions carry equal marks.*
Maximum marks for each part of a question are indicated.
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.

1. Figure 1 shows a pictorial drawing of an object. Draw full size in first angle projection the following views:

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

(b) end elevation in the direction of arrow E;

(c) plan in the direction of arrow P;

Indicate **six** major dimensions.

(20 marks)

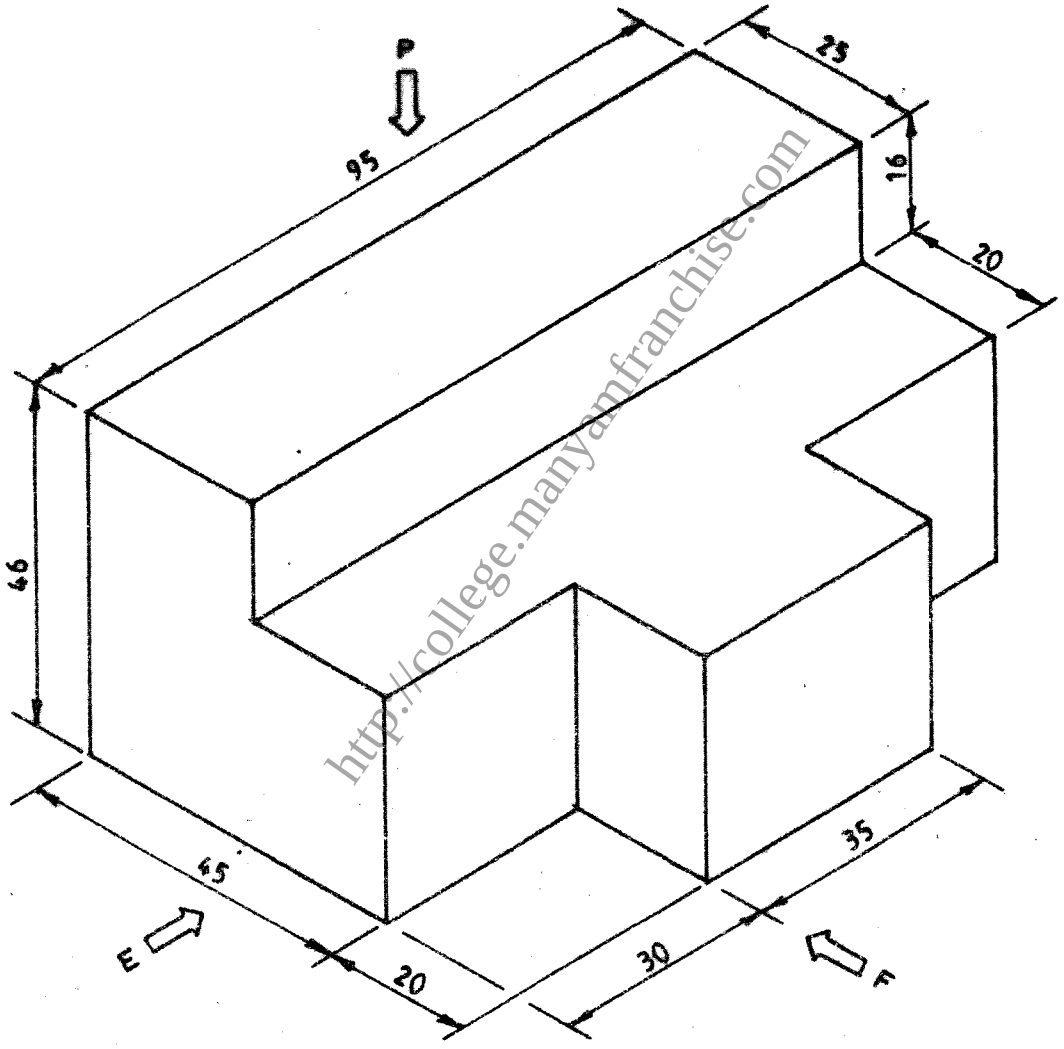


Fig. 1

2. Figure 2 shows a truncated hexagonal prism. Copy the given view and complete the following:

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

(20 marks)

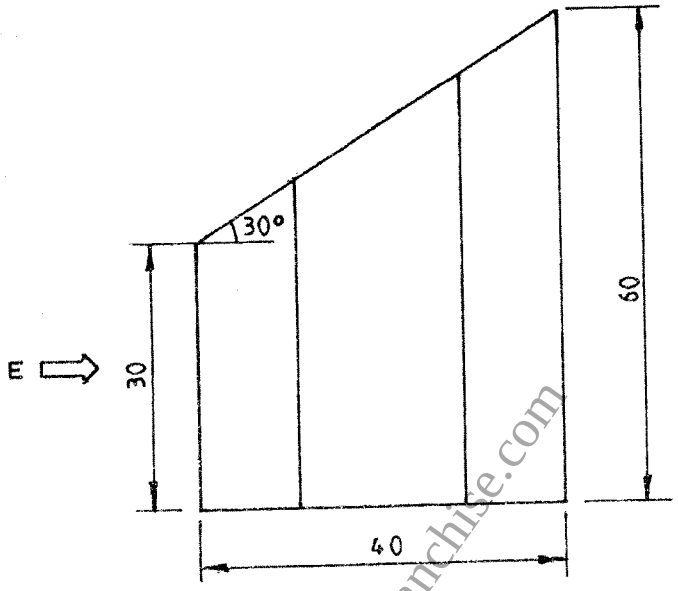


Fig. 2

3. (a) Using free hand, sketch the following hand tools:

(i) flat screw driver;
(ii) combination pliers;
(iii) ball pein hammer;
(iv) scriber;
(v) centre punch.

(10 marks)

(b) Draw the appropriate electrical and electronics symbols for the following:

(i) NOT-gate;
(ii) variable capacitor;
(iii) inductor;
(iv) speaker;
(v) battery;
(vi) wall mounted lamp;
(vii) energy meter;
(viii) motor;
(ix) emergency lamp;
(x) telephone point.

(10 marls)

4. Using appropriate symbols, draw the following circuits:

(a) a stabilized D.C power supply. (10 marks)

(b) a lighting circuit with four lamps L_1, L_2, L_3 and L_4 where lamps L_1 and L_2 are controlled by two two-way switches, S_1 and S_2. Lamps L_3 and L_4 are controlled by one one-way switch, S_3. (10 marks)

5. Figure 3 shows two views of a cast iron hinge block. Draw full size an oblique cabinet view taking corner X as the lowest point. (20 marks)

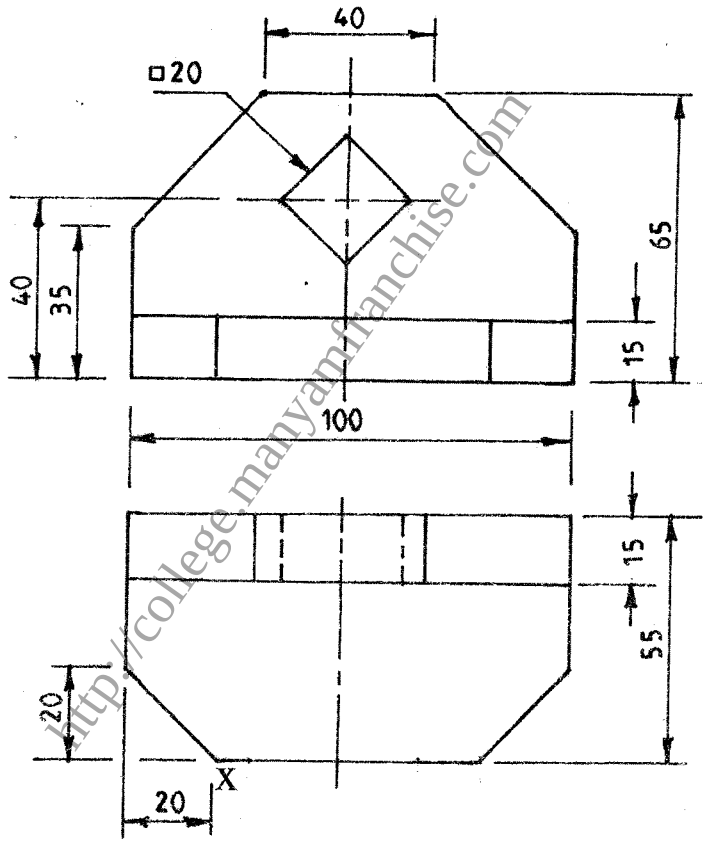


Fig. 3

6. (a) Construct the following:

(i) a square of same area as a rectangle whose sides are 40 by 70 mm;
(ii) a heptagon circumscribed in a circle whose diameter is 80 mm.

(10 marks)

(b) Use concentric circle method to draw an ellipse with the following dimensions:

major axis = 140 mm;
minor axis = 110 mm.

(10 marks)

7. Figure 4 shows a pictorial drawing of an object. Draw full size, in third angle projection, the following views:

(a) sectional front elevation A-A;
(b) end elevation in the direction of arrow E;
(c) a sectional plan on B-B.

Insert **six** major dimensions.

(20 marks)

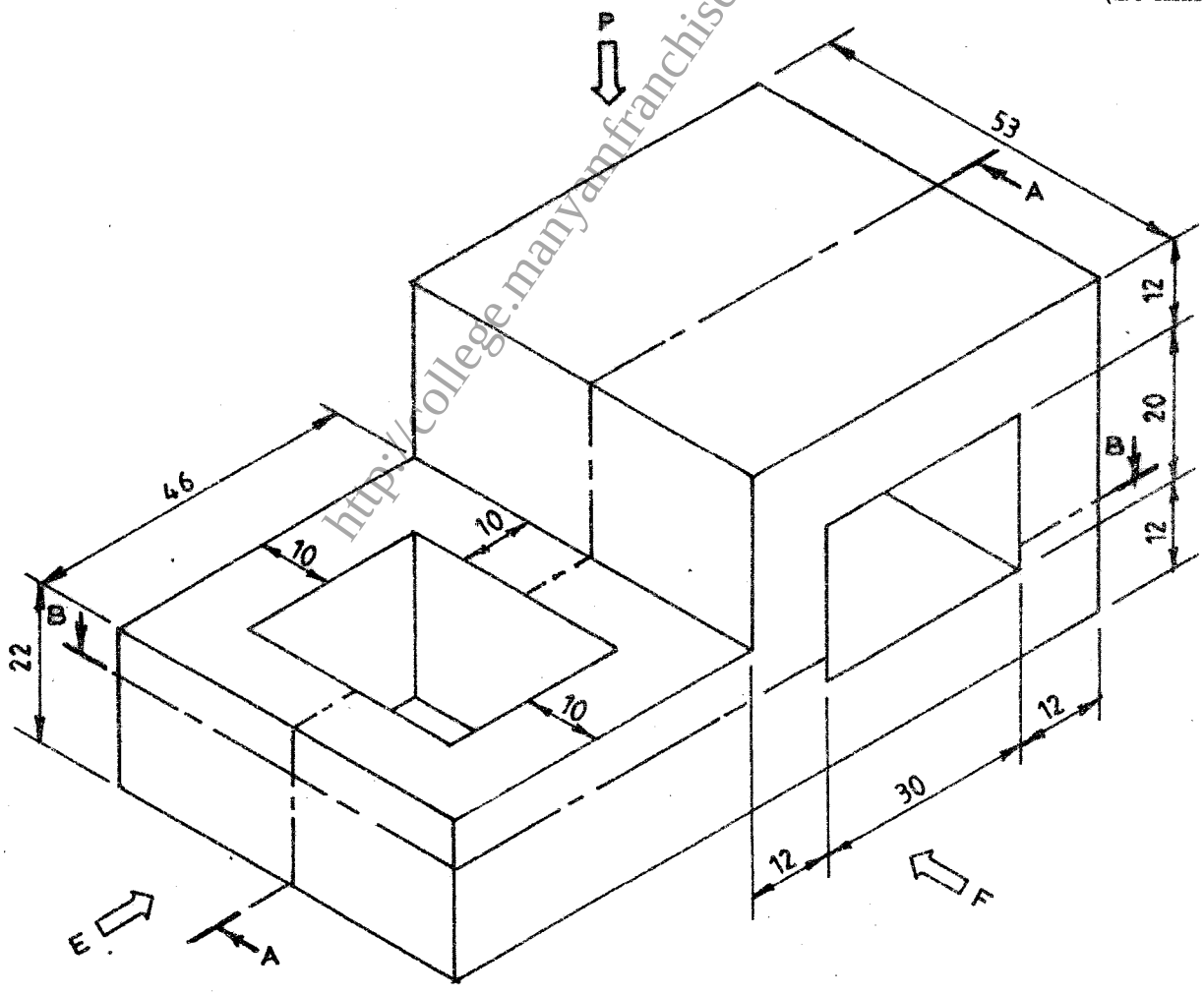


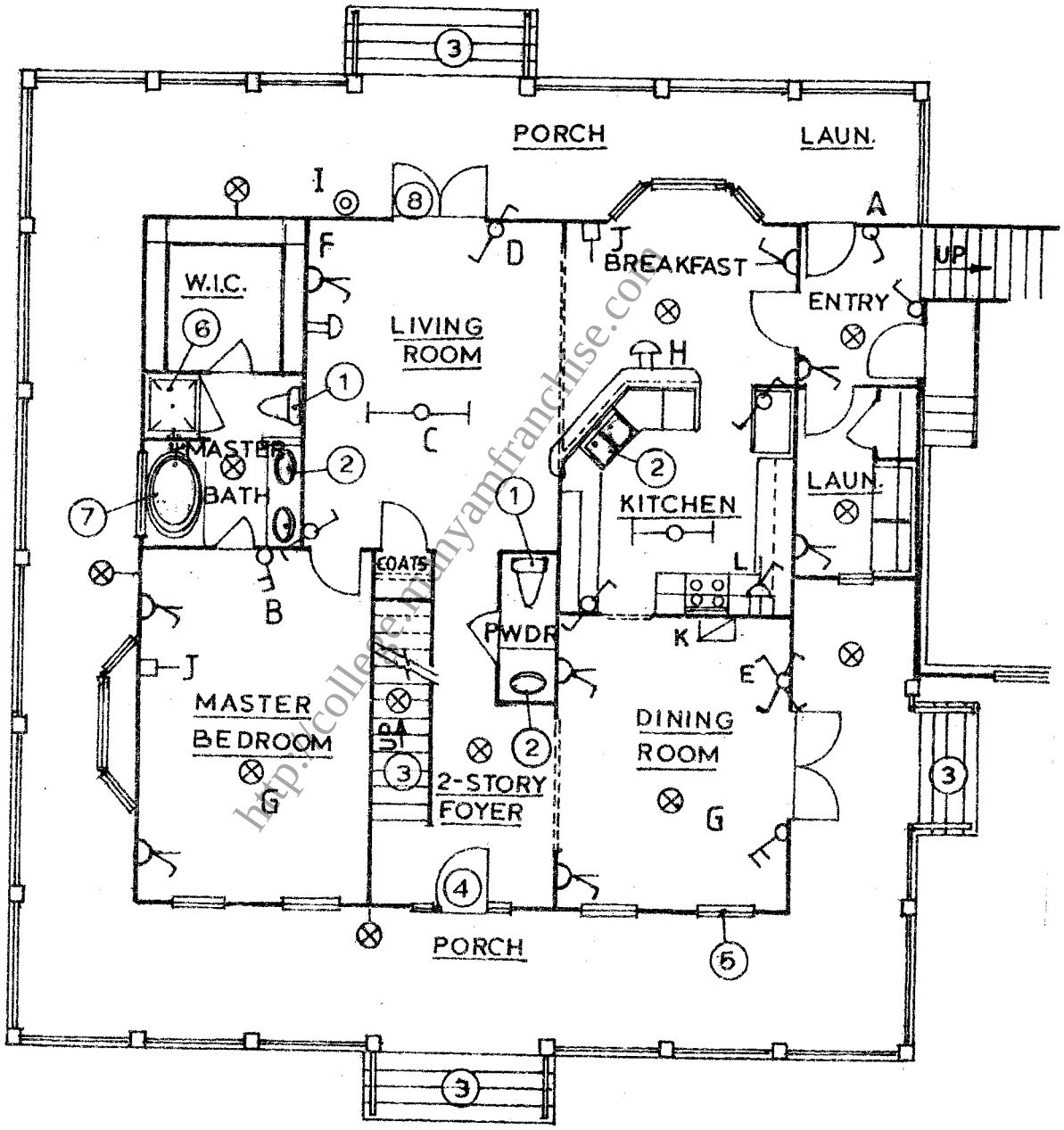
Fig. 4

8. Figure 5 shows the electrical and architectural design of a plan of a three bedroomed house. Name:

(a) electrical installation symbols labelled A - L.

(b) building symbols labelled 1 - 8.

(20 marks)



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