

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:

- front elevation in the direction of arrow F;
- end elevation in the direction of arrow E;
- plan in the direction of arrow P;

Indicate six major dimensions.

(20 marks)

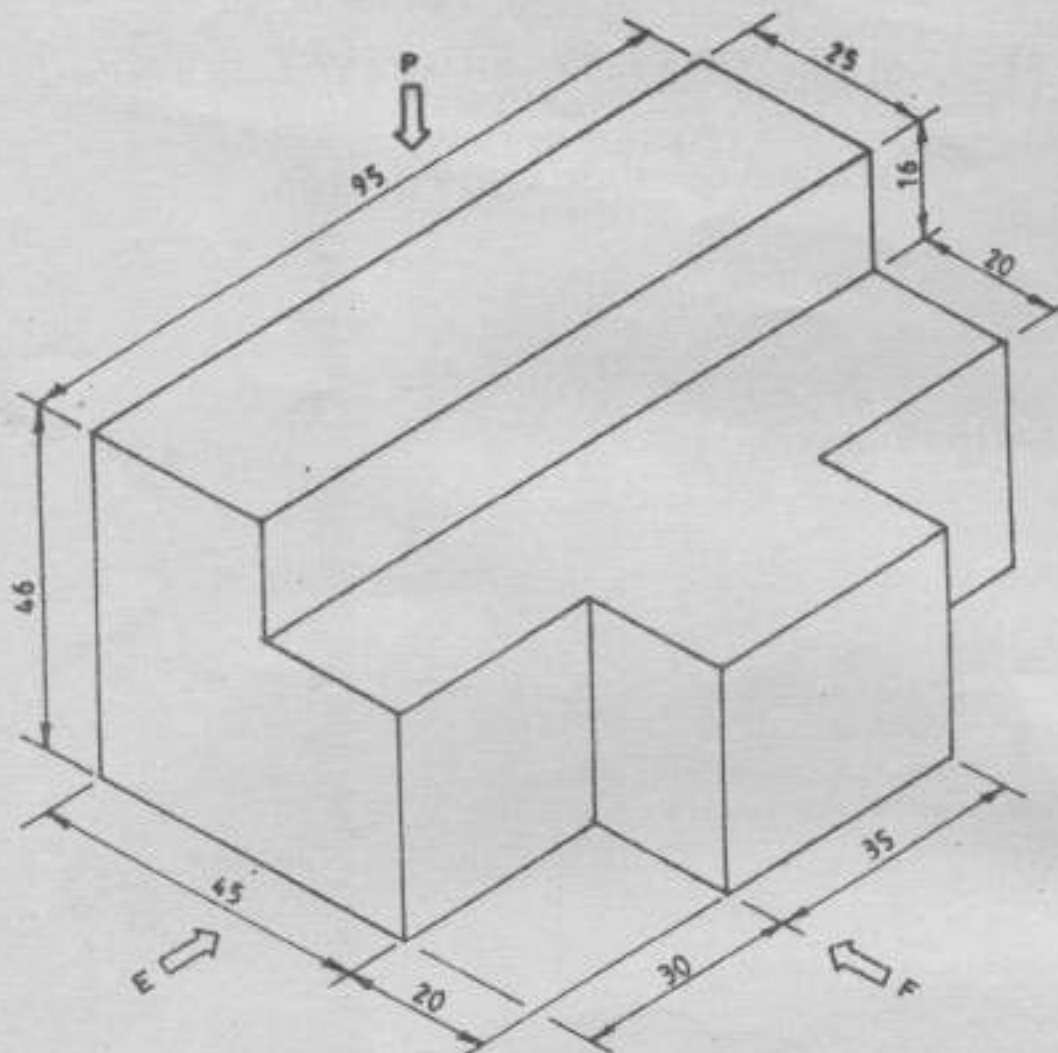


Fig. 1

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)

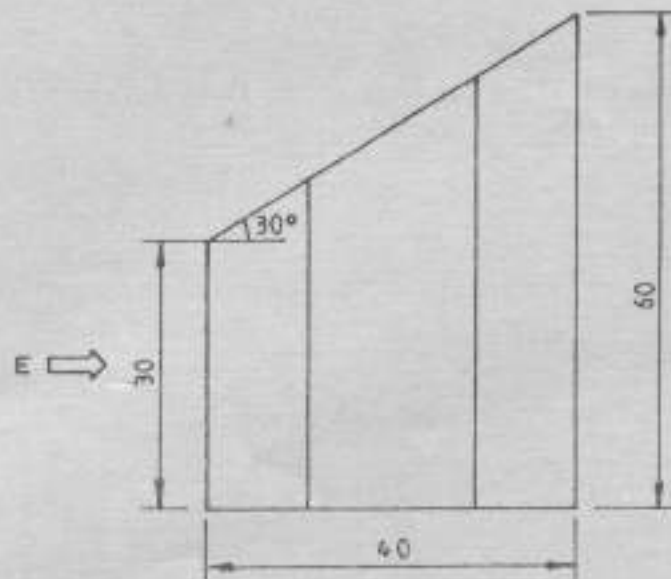


Fig. 2

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

- (i) flat screw driver;
- (ii) combination pliers;
- (iii) ball peen 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 marks)

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)

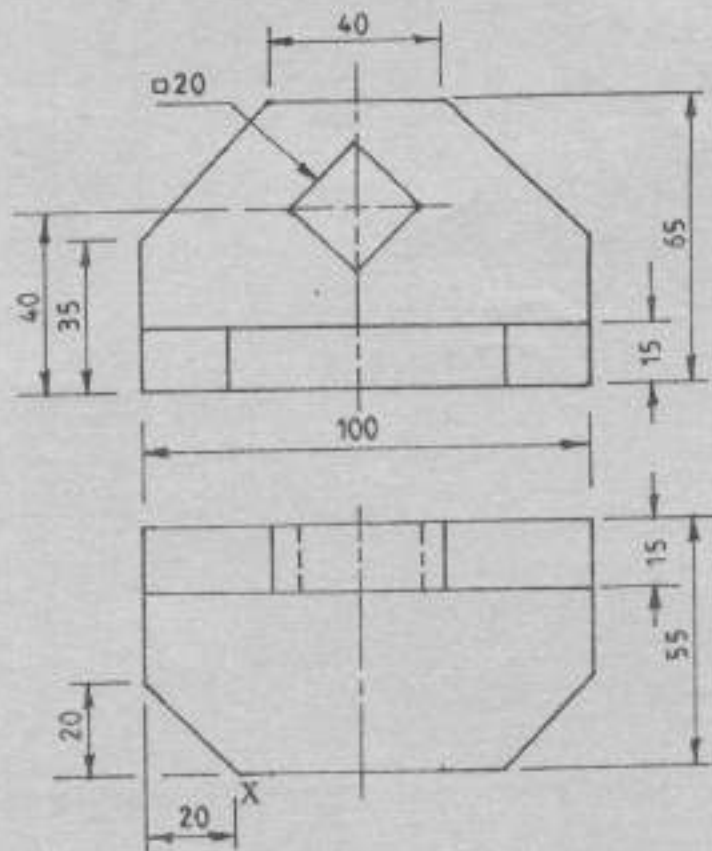


Fig. 3

6. (a) Construct the following:
- a square of same area as a rectangle whose sides are 40 by 70 mm;
 - 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:

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

Insert **six** major dimensions.

(20 marks)

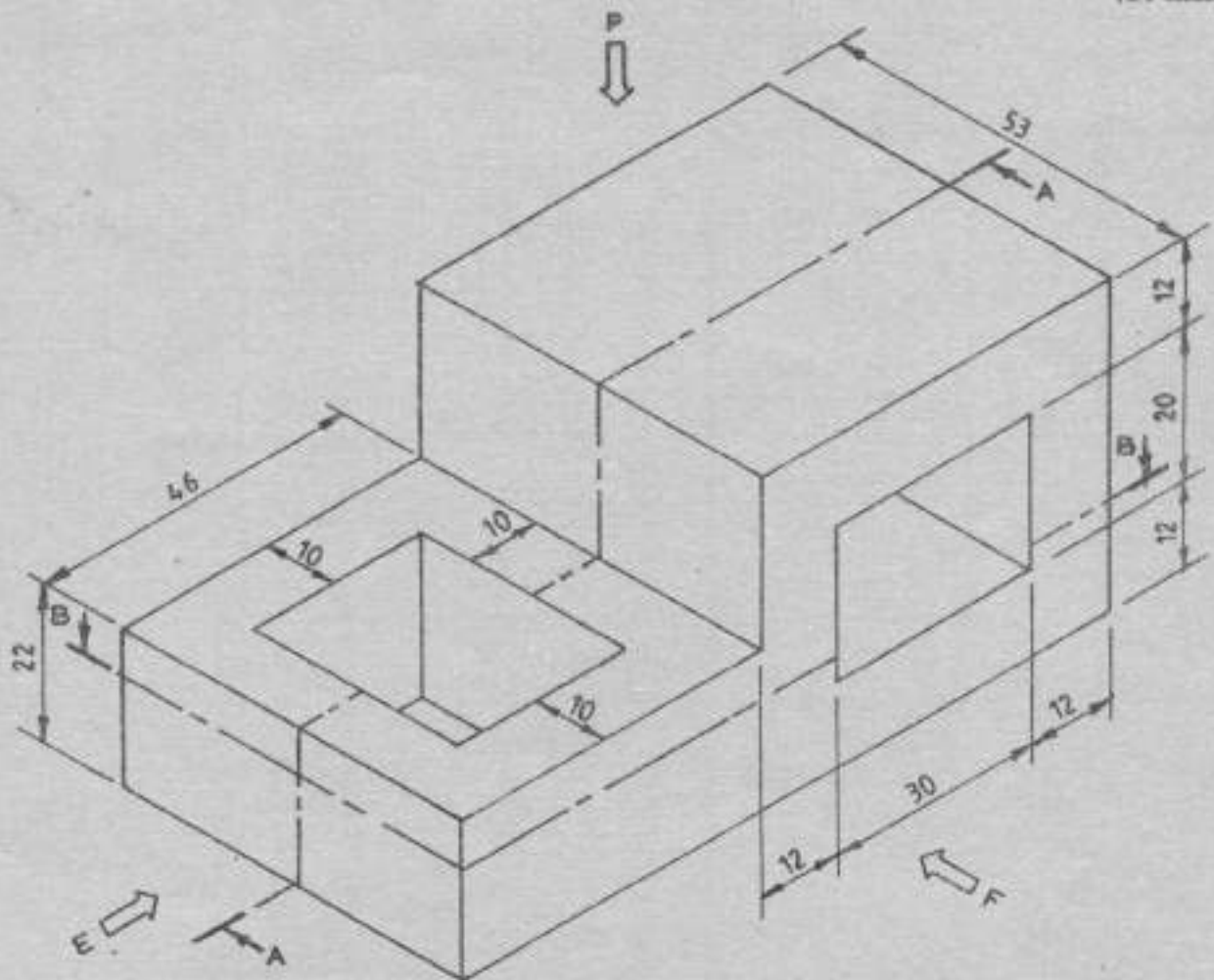
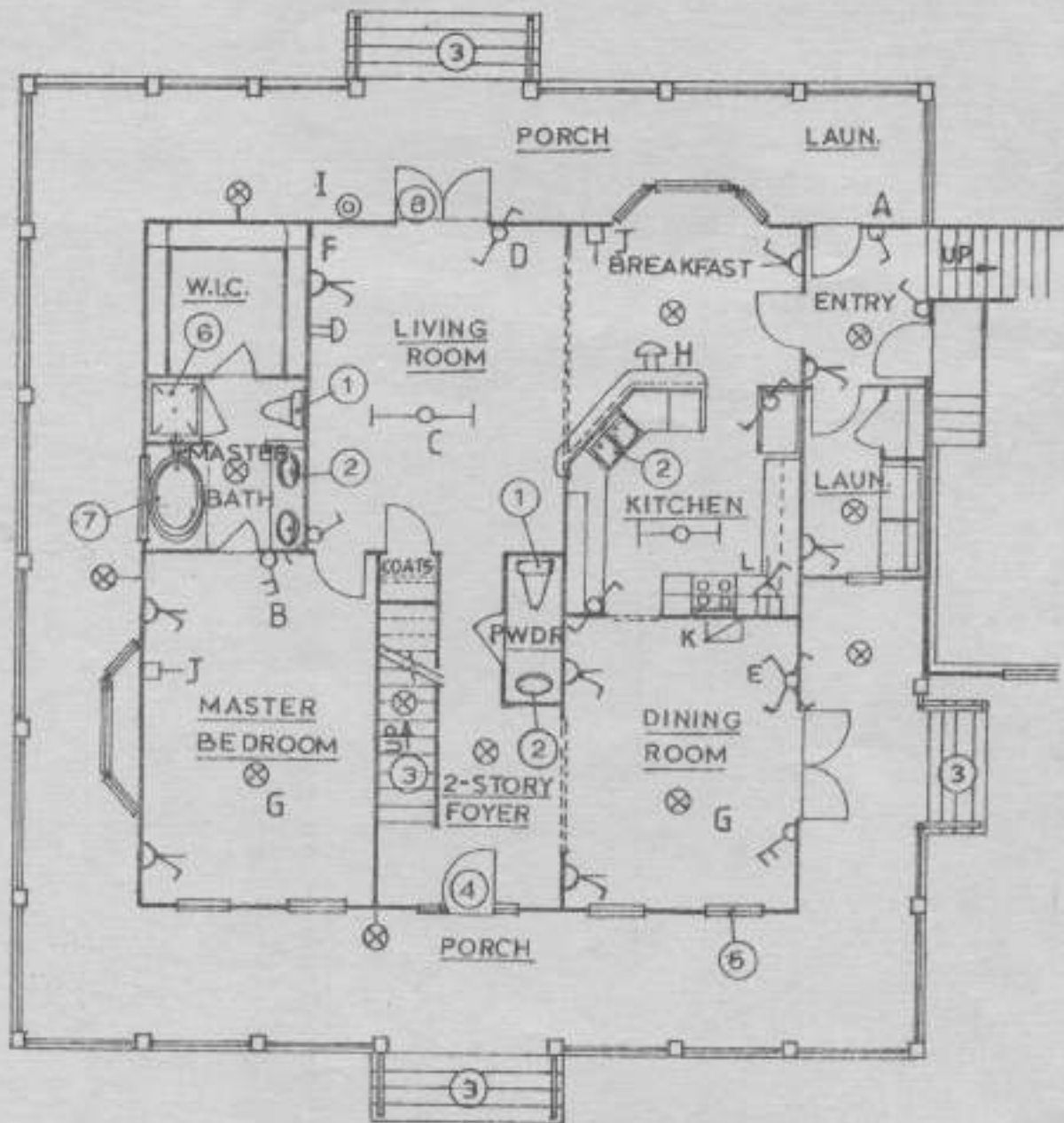


Fig. 4

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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