

1601/104

1602/104

TECHNICAL DRAWING I

Oct./Nov. 2016

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:*

*Drawing instruments; and*

*Drawing papers.*

*Answer any FIVE of the EIGHT questions.*

*Maximum marks for each part of a question are as shown.*

*All dimensions are in millimeters.*

*Candidates should answer the questions in English.*

**This paper consists of 7 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 view of a block. Draw full size the following views in first angle projection:

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

Insert six major dimensions.

(20 marks)

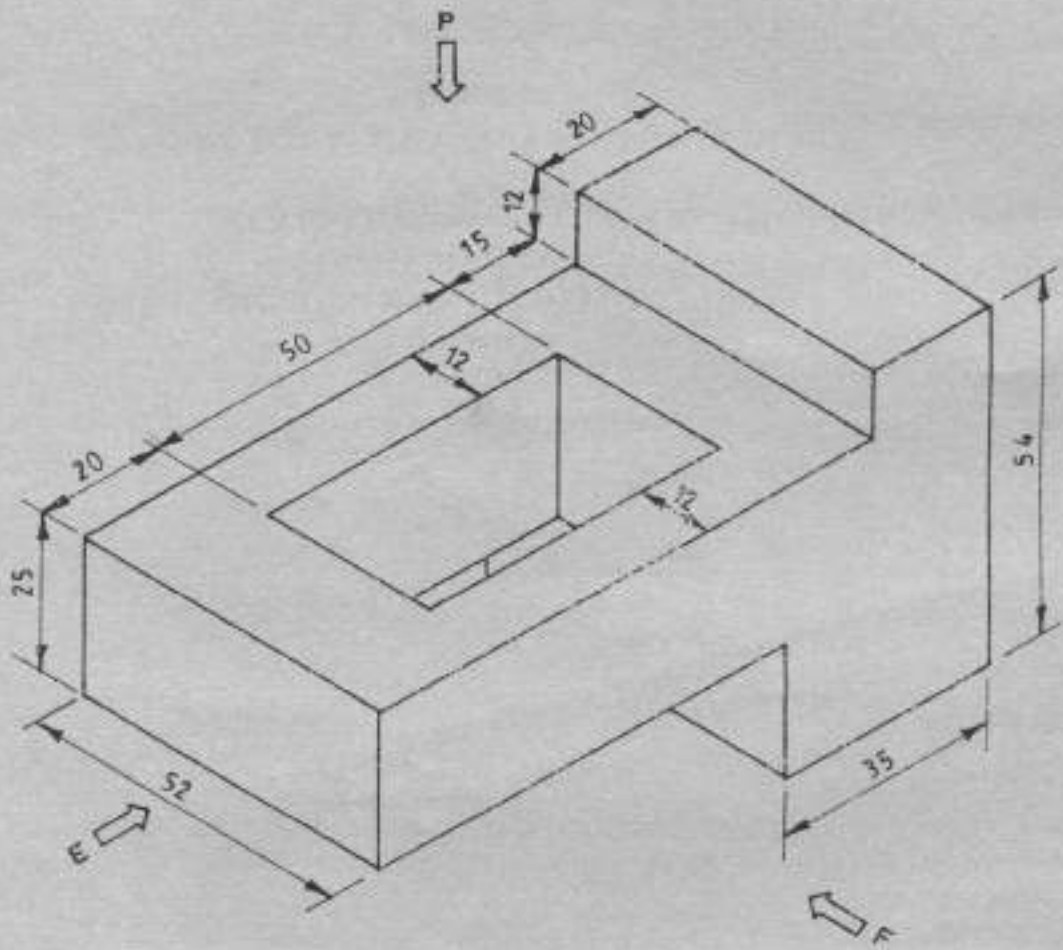


Fig. 1

2. Figure 2 shows two views of a casting drawn in first angle projection. Draw full size an oblique cabinet projection taking corner N as the lowest point. (20 marks)

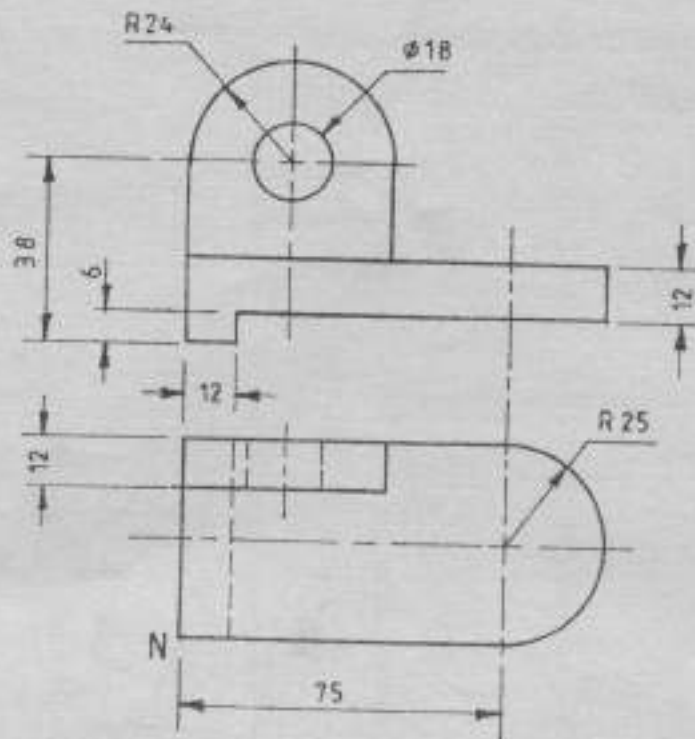


Fig 2

3. Figure 3 shows a truncated hexagonal pyramid. Using first angle projection, draw the given view and complete the:
- plan;
  - end elevation in the direction of arrow E;
  - true shape of the cut surface;
  - surface development of the frustrum.

(20 marks)

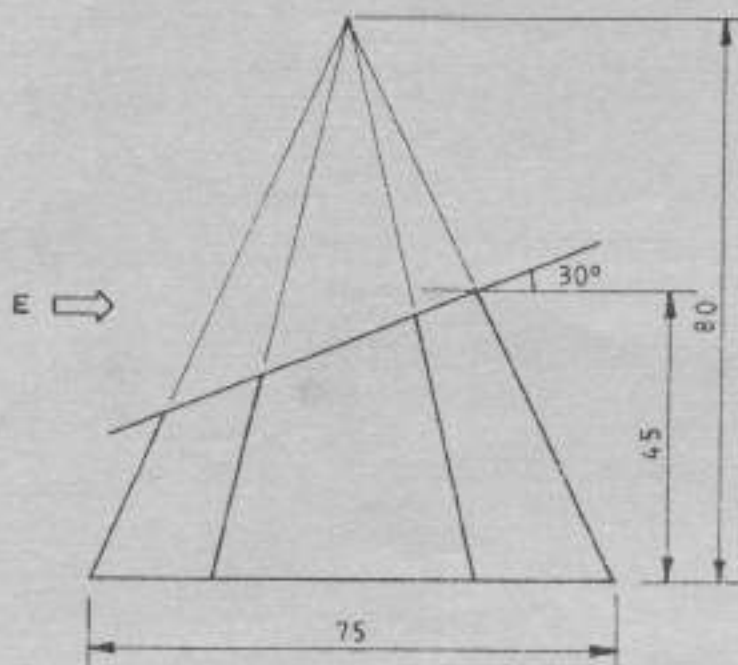


Fig. 3

4. (a) Draw the preferred symbols for the following:

- photodiode;
- PNP transistor;
- ammeter;
- variable resistor;
- generator;
- AND gate;
- A.C. voltage source;
- microphone;
- light emitting diode;
- potentiometer.

(10 marks)

(b) Sketch the following accessories and hand tools:

- (i) switched socket outlet;
- (ii) straight batten lamp holder;
- (iii) Tee-box;
- (iv) star screw driver;
- (v) bradawl.

(10 marks)

5. Draw a circuit diagram of a direct on-line starter for a three phase induction motor.

(20 marks)

6. Figure 4 shows the front elevation of two intersecting cylinders. Copy the given view and draw in third angle the:

- (a) plan;
- (b) line of intersection;
- (c) development of cylinder B.

(20 marks)

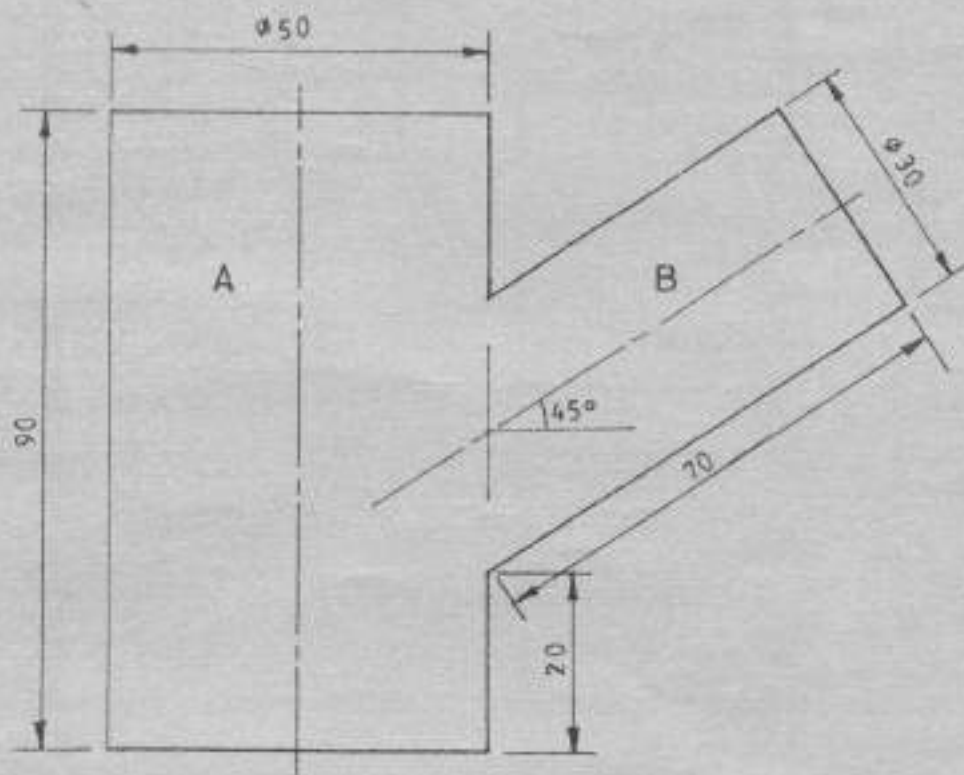


Fig. 4

7. Figure 5 shows the plan of a four bedroomed house. On the plan provided, design suitable electrical power and lighting points for the installation. (20 marks)

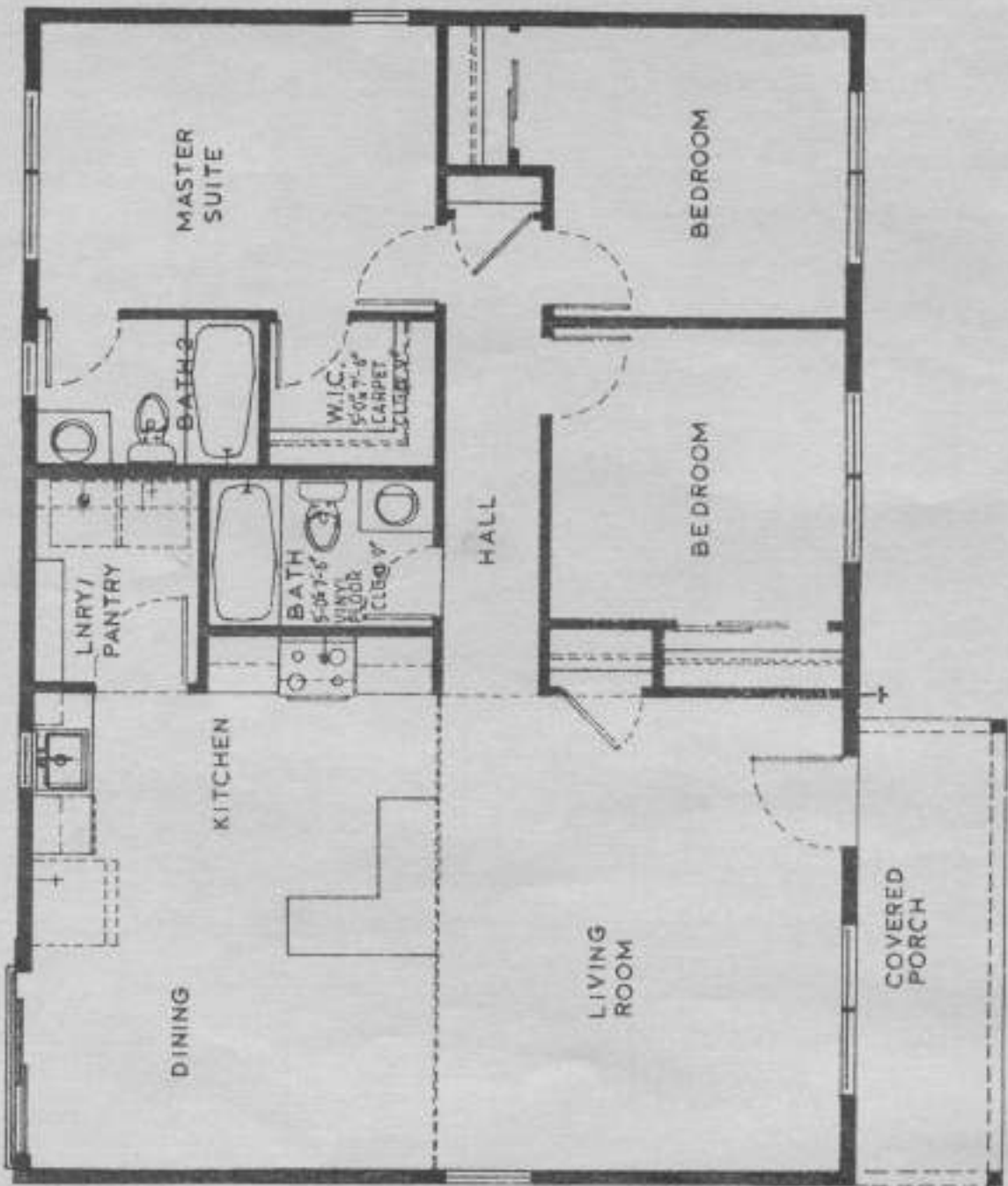


Fig. 5

8. (a) Inscribe a regular octagon in a square with sides 80 mm. (10 marks)
- (b) Using the trammel method, draw an ellipse given the major axis = 130 mm and minor axis = 100 mm. (10 marks)

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Use this plan to answer Question 7.

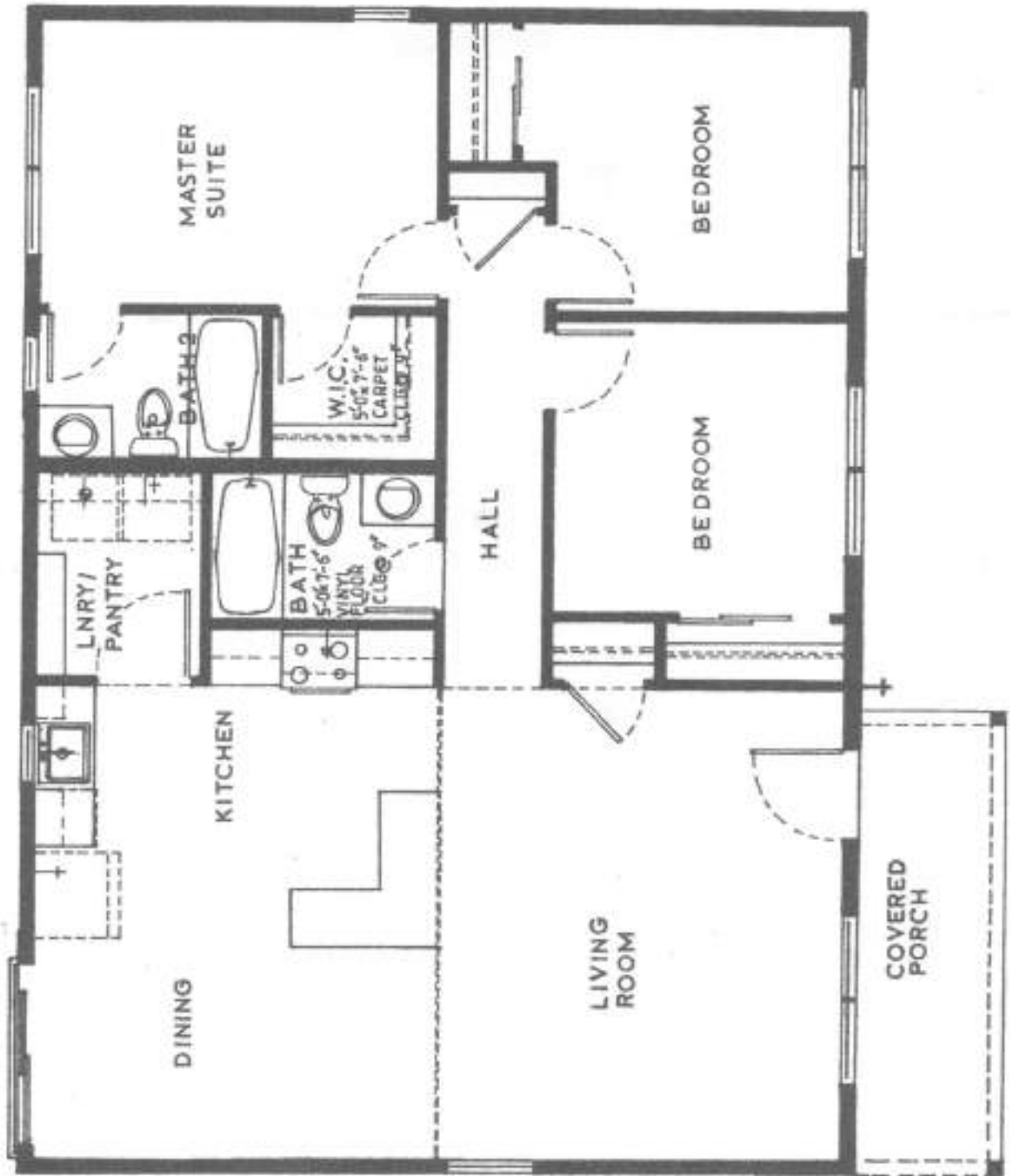


Fig. 5