

SCAN

1601/104  
1602/104  
TECHNICAL DRAWING I  
June/July 2015  
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**CRAFT CERTIFICATE IN ELECTRICAL AND ELECTRONICS ENGINEERING  
(POWER OPTION)  
(TELECOMMUNICATION OPTION)**

**MODULE I**

TECHNICAL DRAWING I

3 hours



**INSTRUCTIONS TO CANDIDATES**

*You should have drawing instruments and drawing papers for this examination.  
Answer any **FIVE** of the **EIGHT** questions in this paper.  
Maximum marks for each part of a question are as shown.  
All dimensions are in millimeters.  
Do **NOT** remove any pages from this question paper.  
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.**

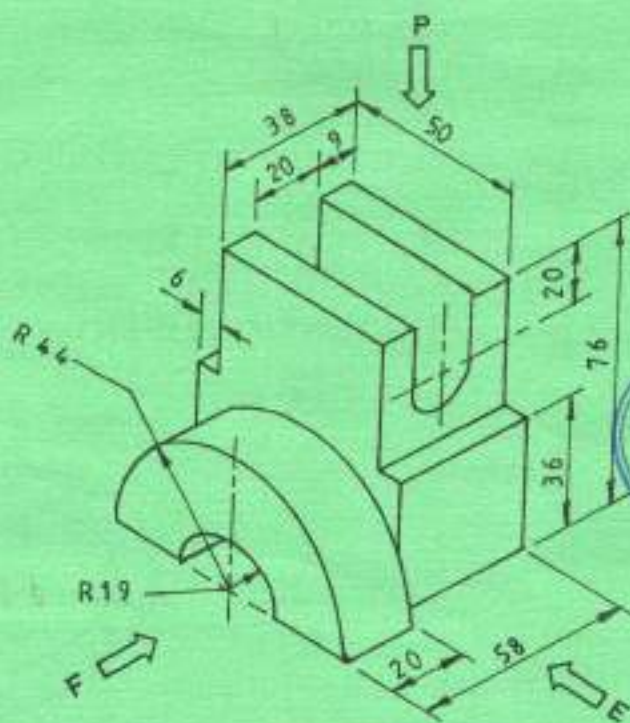


1. **Figure 1** shows a pictorial view of a block. Draw full size the following views in first angle projection:

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

Insert any six major dimensions.

(20 marks)



**Figure 1**

2. (a) Use free hand to sketch the following hand tools:

- flat screw driver;
- spirit level;
- chisel hammer;
- combination pliers;
- tin snips.

(10 marks)

- (b) Draw the following electronic symbols according to BS 3939:

- PNP transistor;
- microphone;
- variable resistor;
- inductor;
- light emitting diode.

(10 marks)

3. (a) Draw a circuit diagram of a variable power supply. (10 marks)
- (b) Figure 2 shows a final lighting circuit layout. Draw its wiring diagram. (10 marks)

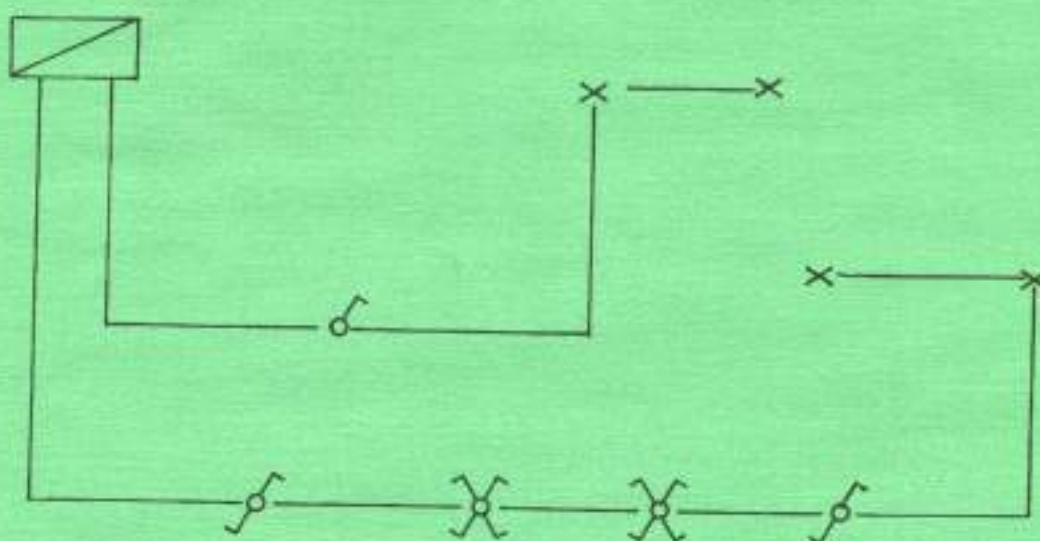


Figure 2

4. Figure 3 shows the elevation of a truncated hexagonal pyramid. Redraw the elevation and draw the:

- (a) plan;  
 (b) end elevation;  
 (c) true shape;  
 (d) surface development.

(20 marks)

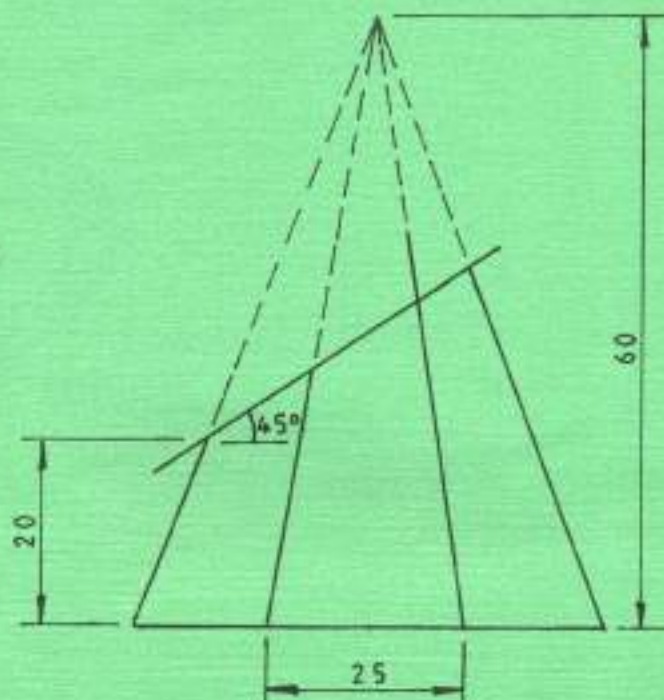


Figure 3



5. **Figure 4** shows two views of an object drawn in first angle projection. Draw an isometric view of the object taking corner N as the lowest point. Insert any six major dimensions. (20 marks)

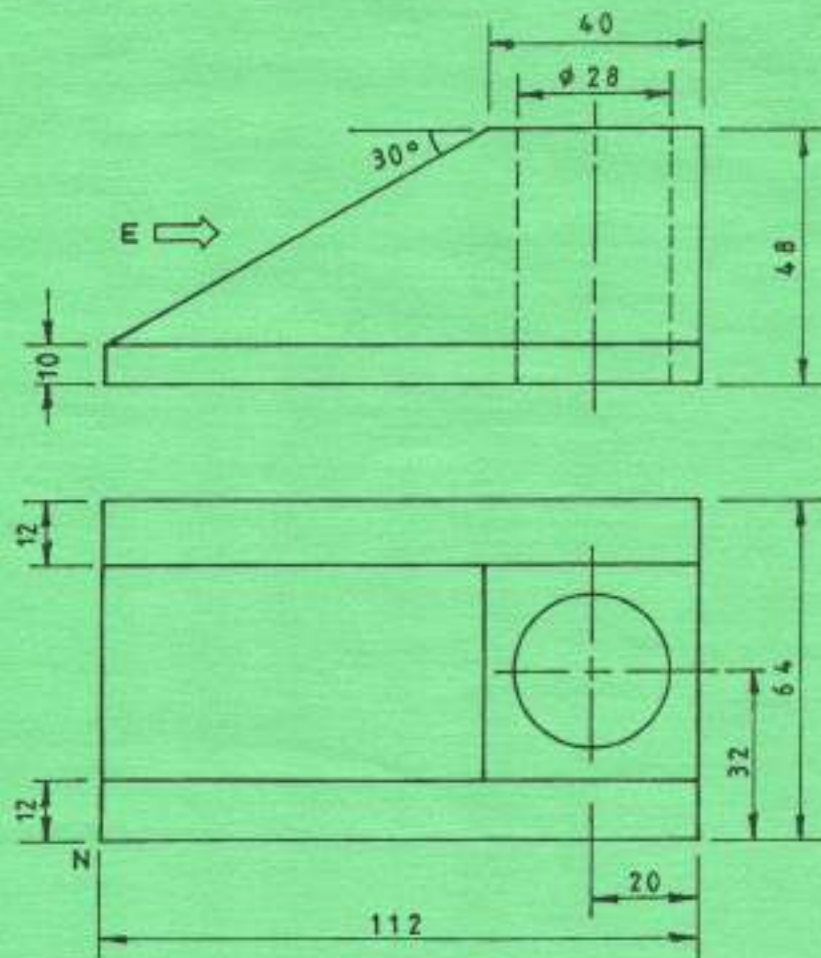


Figure 4

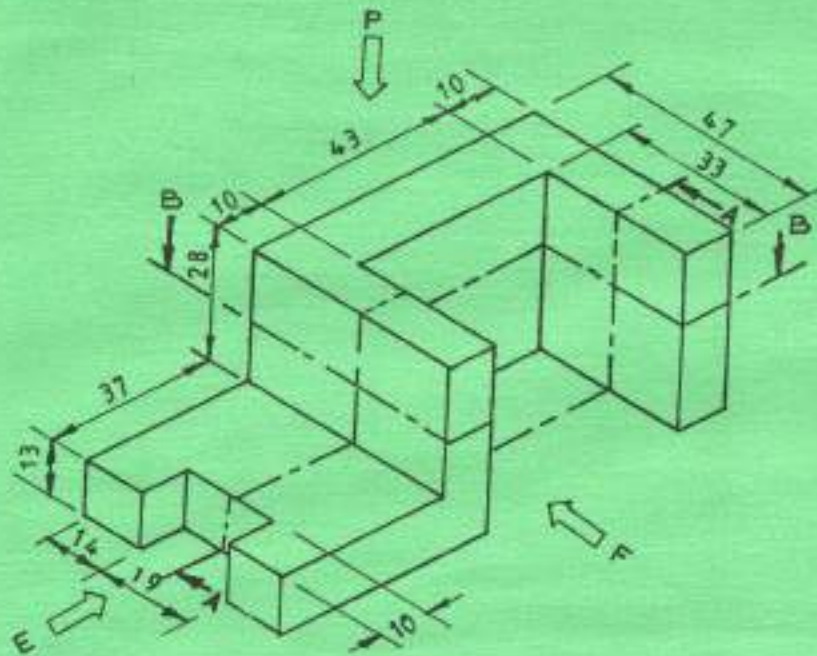


6. **Figure 5** shows a pictorial view of an object. Draw full size, in first angle projection, the following views:

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

Insert six major dimensions.

(20 marks)



**Figure 5**

- Draw a triangle ABC with  $AB = 80$  mm,  $AC = 80$  mm and  $BC = 65$  mm and circumscribe the triangle. (5 marks)
- Construct a tangent to a circle of diameter 60 mm at a point C on the circumference of the circle. (5 marks)
- Construct a regular pentagon in a circle of diameter 80 mm. (5 marks)
- Draw an involute to a square of side 25 mm. (5 marks)





8. (a) **Figure 6** shows the floor plan of a three bed-roomed house. Design a suitable lighting system and power points for the plan. Use appropriate architectural electrical symbols to show the following:
- (i) incandescent lamps and their switching points;
  - (ii) florescent lamps and their switching points;
  - (iii) socket outlets;
  - (iv) telephone points;
  - (v) bell;
  - (vi) bell push;
  - (vii) consumer unit;
  - (viii) energy meter;
  - (ix) cooker unit.
- (b) Draw a suitable key to describe the symbols used in 8 (a). (20 marks)





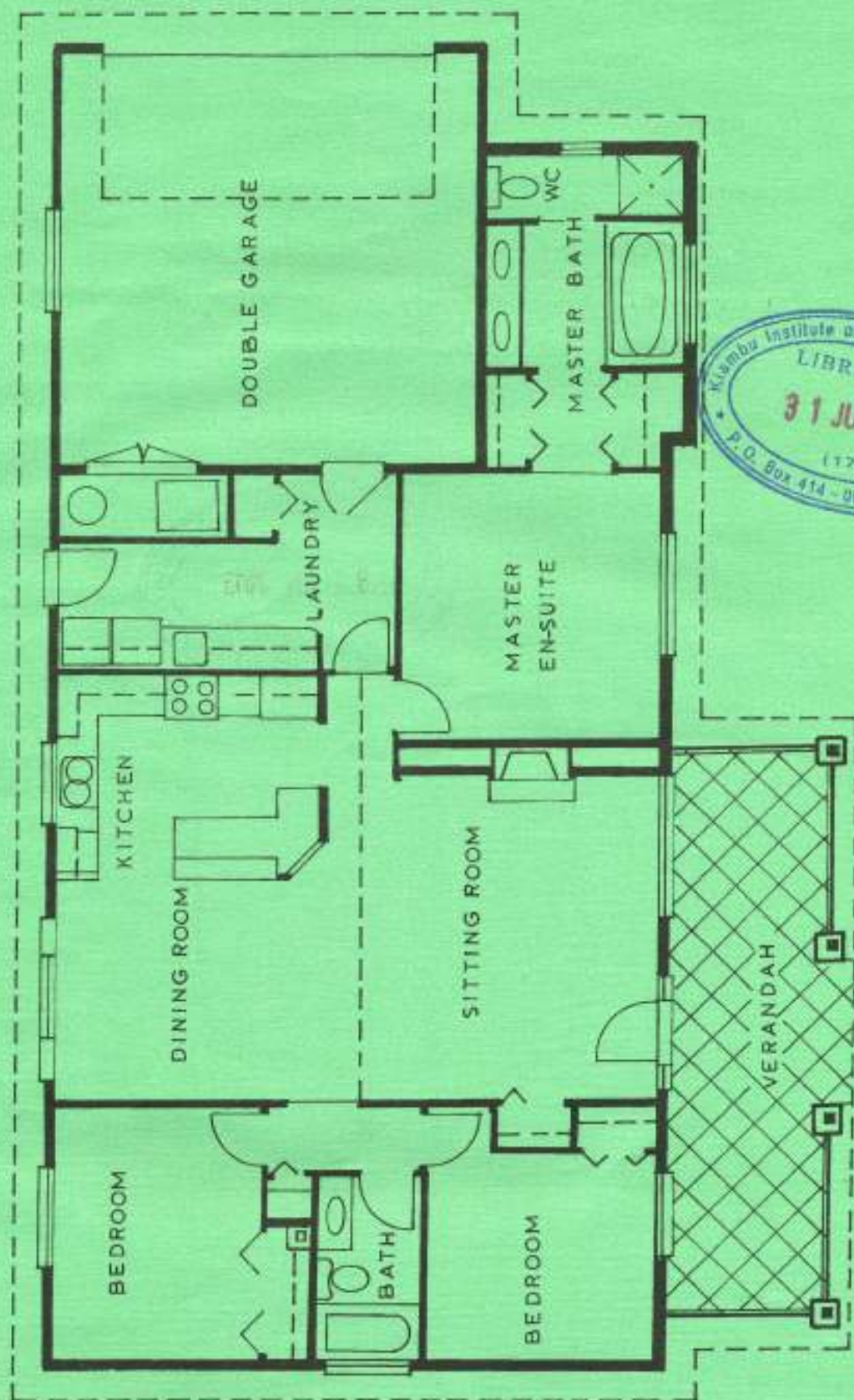


Figure 6