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.

Turn over

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

(a) plan in the direction of arrow P;
(b) front elevation in the direction of arrow F;
(c) end elevation in the direction of arrow E.

Insert any **six** major dimensions. (20 marks)

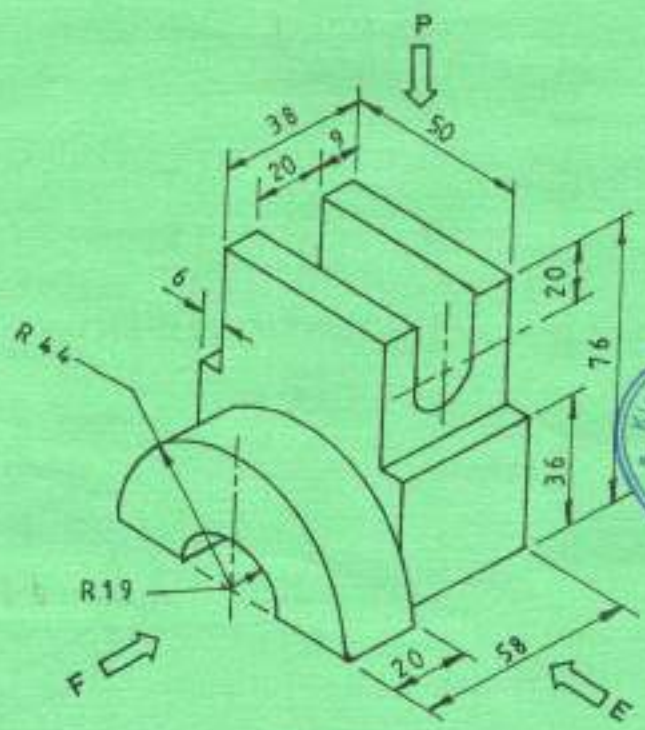

Figure 1

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

(i) flat screw driver;
(ii) spirit level;
(iii) chisel hammer;
(iv) combination pliers;
(v) tin snips. (10 marks)

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

(i) PNP transistor;
(ii) microphone;
(iii) variable resistor;
(iv) inductor;
(v) 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)

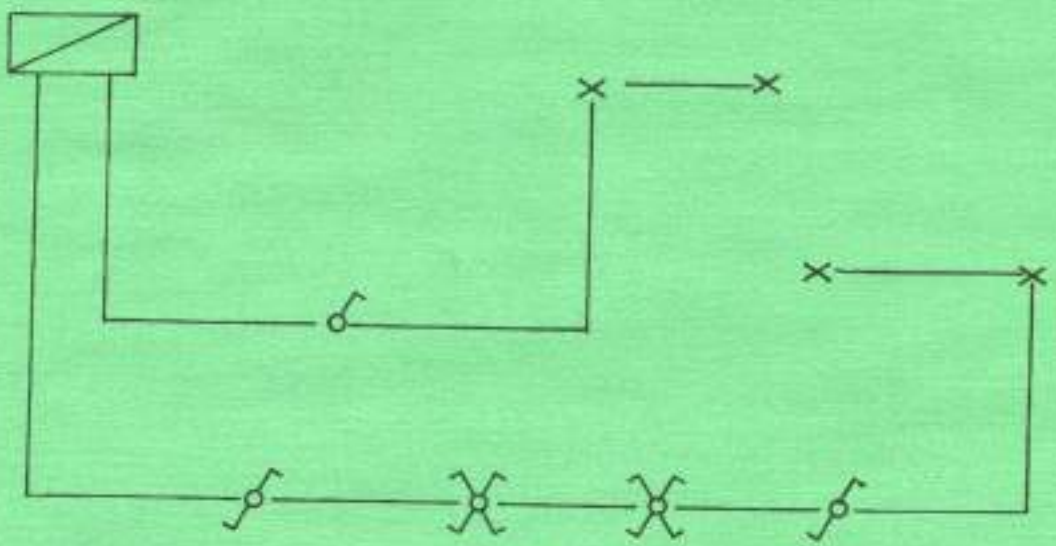

Figure 2

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)

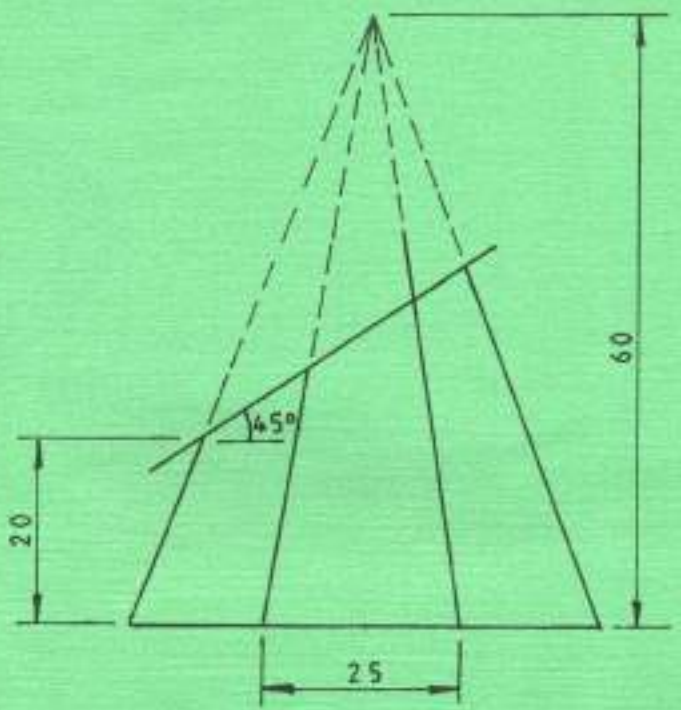

Figure 3

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)

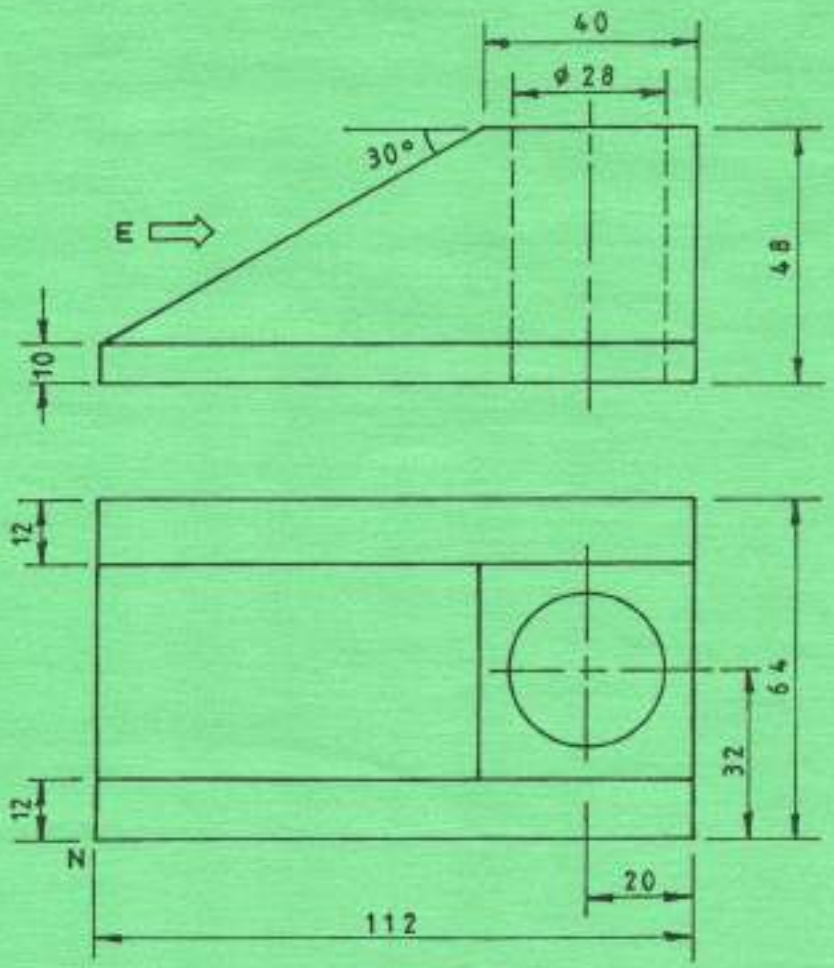

Figure 4

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

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

Insert **six** major dimensions. (20 marks)

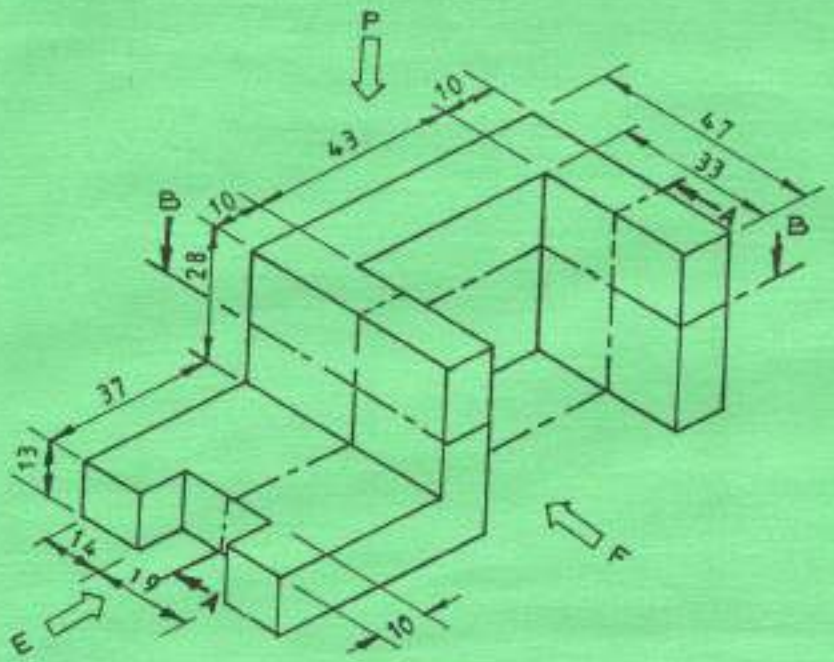

Figure 5

7. (a) Draw a triangle ABC with AB = 80 mm, AC = 80 mm and BC = 65 mm and circumscribe the triangle. (5 marks)

(b) Construct a tangent to a circle of diameter 60 mm at a point C on the circumference of the circle. (5 marks)

(c) Construct a regular pentagon in a circle of diameter 80 mm. (5 marks)

(d) 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)

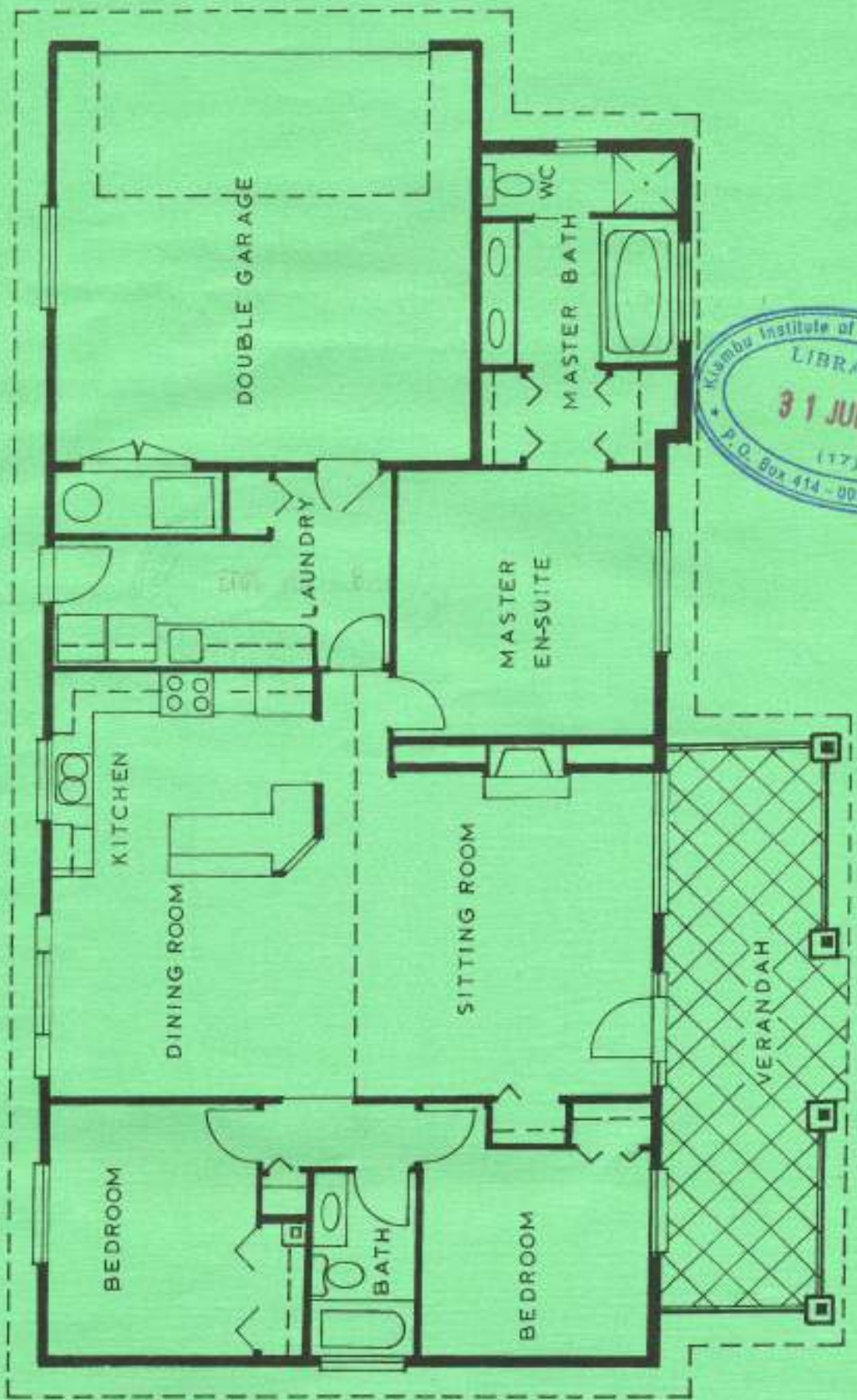

Figure 6