1601/104
1602/104
TECHNICAL DRAWING I
June/July 2019
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;*
- *Drawing papers;*
- *Computer installed with AutoCAD and electronic CAD software;*
- *Printer;*
- *Printing paper.*

*Answer any **FIVE** of the **EIGHT** questions.*
All questions carry equal marks.
Maximum marks for each part of a question are as indicated.
All dimensions are in millimeters.
Candidates should answer the questions in English.

This paper consists of 7 printed pages plus 1 insert.

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 including hidden details:

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

(b) End elevation in the direction of arrow E.

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

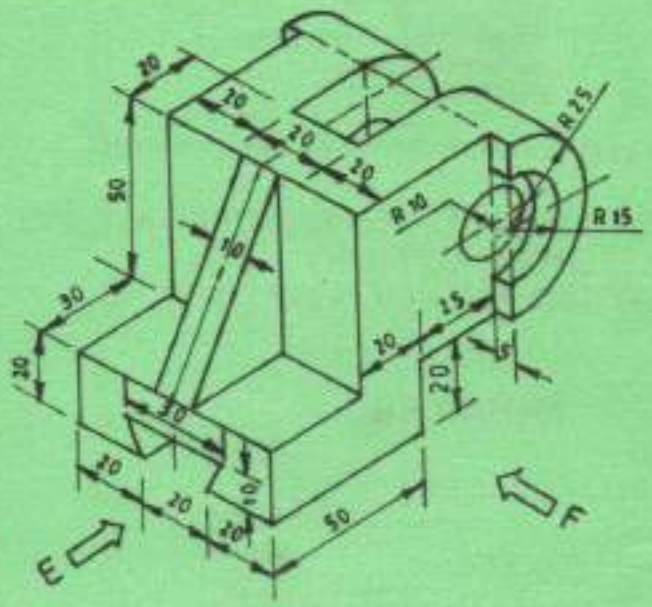


Fig.1

2. Figure 2 shows two views of an object drawn in first angle projection. Draw an isometric view of the object making corner P the lowest point. (20 marks)

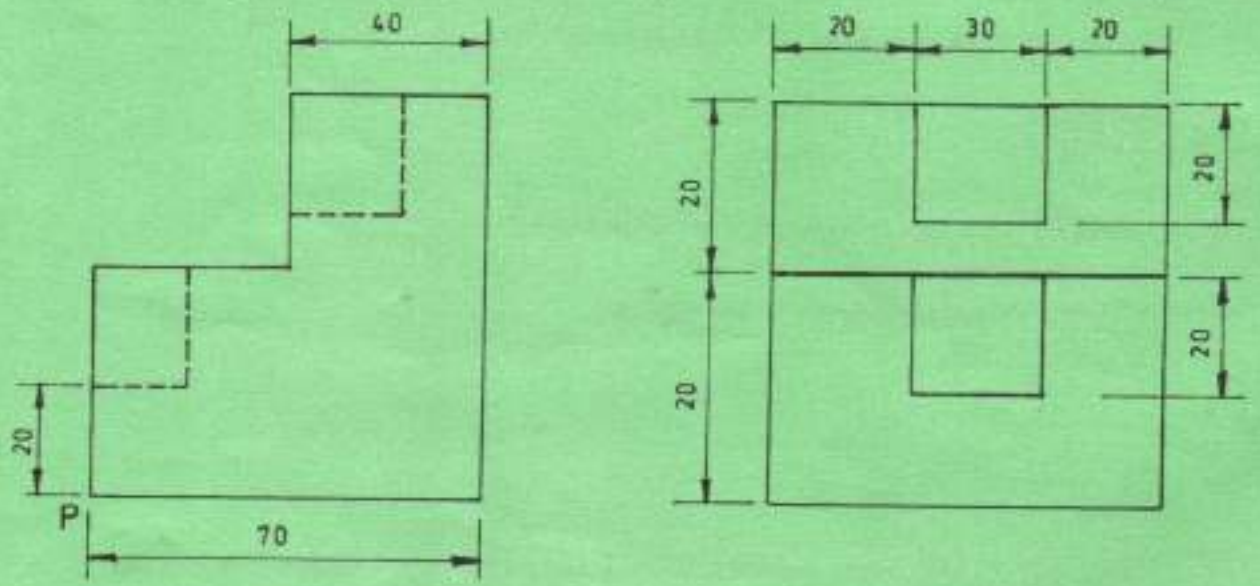


Fig.2

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

(i) flat screw driver;

(ii) fluorescent fitting;

(iii) deep pattress box;

(iv) flat file;

(v) single pole switch. (15 marks)

(b) Draw the following electronic symbols:

(i) light emitting diode;

(ii) AND gate;

(iii) inductor;

(iv) relay;

(v) NOR gate. (5 marks)

4. (a) Using concentric circle method, construct an ellipse given major axis as 130 mm and minor axis 100 mm. (10 marks)

(b) Construct a regular heptagon with sides 40 mm using compass and ruler only. (5 marks)

(c) Construct a square equal in area to a given rectangle ABCD 60 mm by 30 mm. (5 marks)

5. Figure 3 shows two incomplete views of two dissimilar square prisms meeting at an angle.

(a) Copy the views and:

(i) draw the point of intersection;

(ii) complete the plan.

(b) Draw the end elevation in the direction of arrow E. (20 marks)

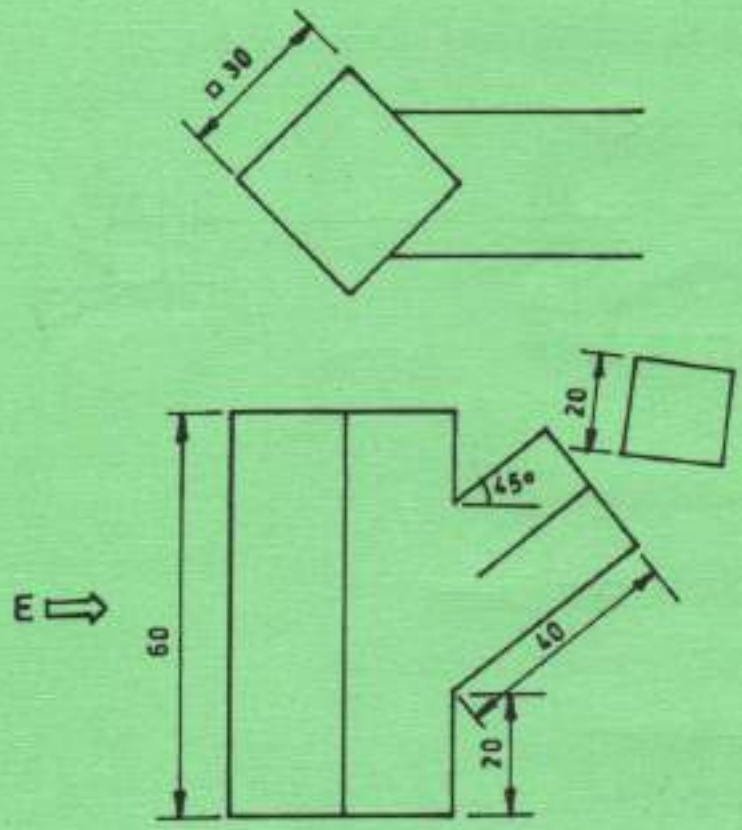


Fig. 3

6. Figure 4 shows and electronic circuit. Using any computer aided design software:

(a) Draw the circuit;

(b) Print the circuit and hand over your work. (20 marks)

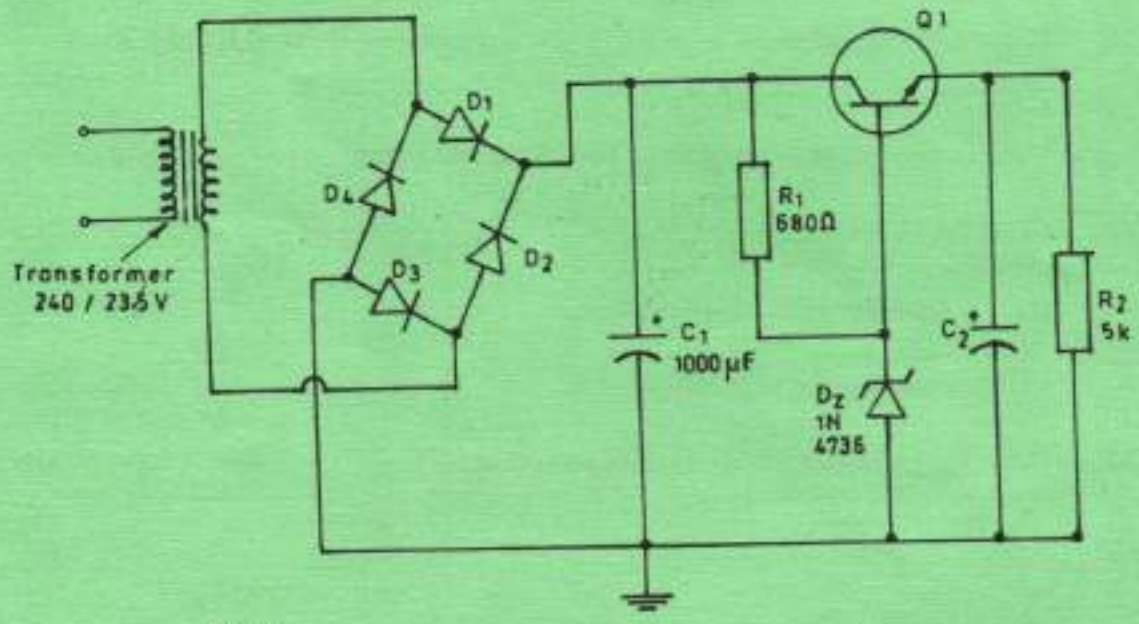


Fig. 4

7. Figure 5 shows the layout of a template. Using AutoCAD software, draw, print and hand over the hard copy. (20 marks)

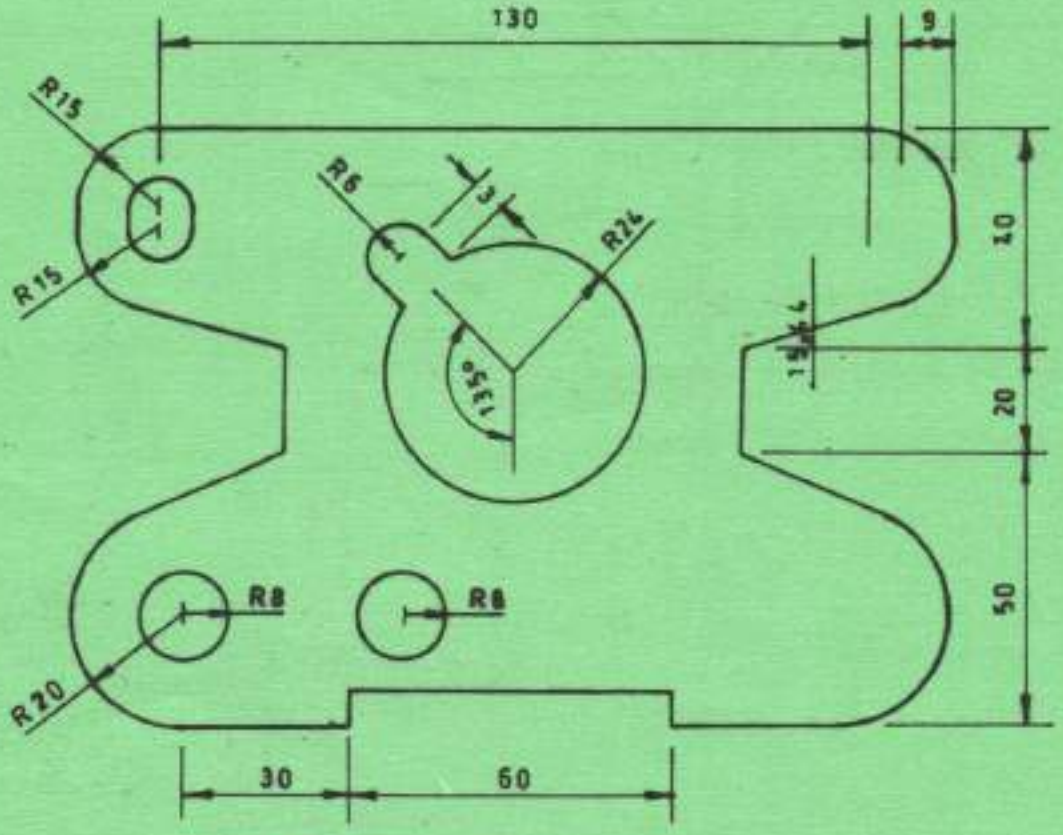


Fig.5

8. (a) Figure 6 shows the floor plan of a house. On the plan provided, use preferred electrical symbols and assign lighting and power points to include each of the following:

(i) lighting and switching points;

(ii) socket outlets;

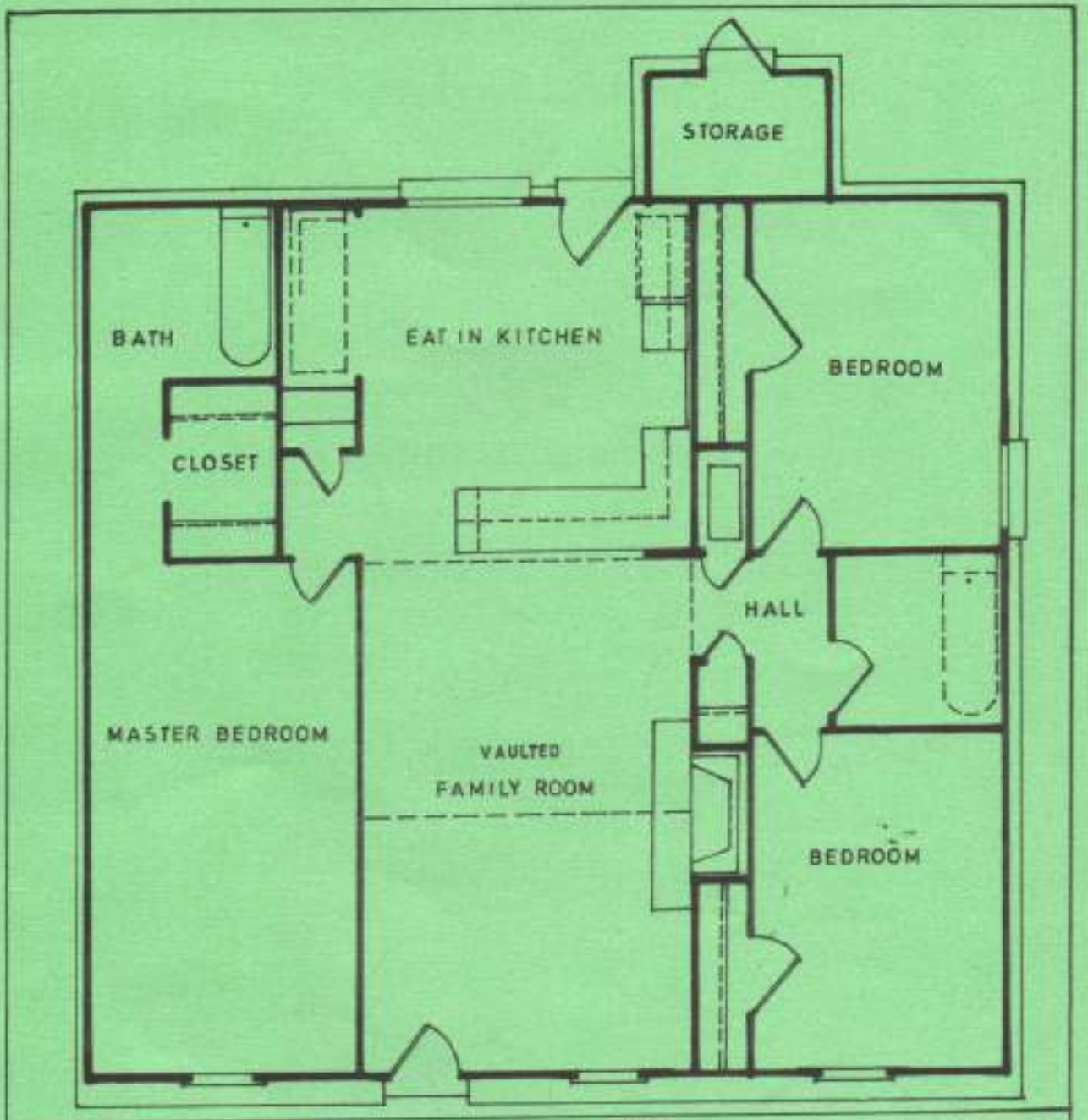
(iii) call points;

(iv) consumer unit;

(v) cooker control unit.

(b) Complete the key table shown.

(20 marks)



KEY

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