

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)

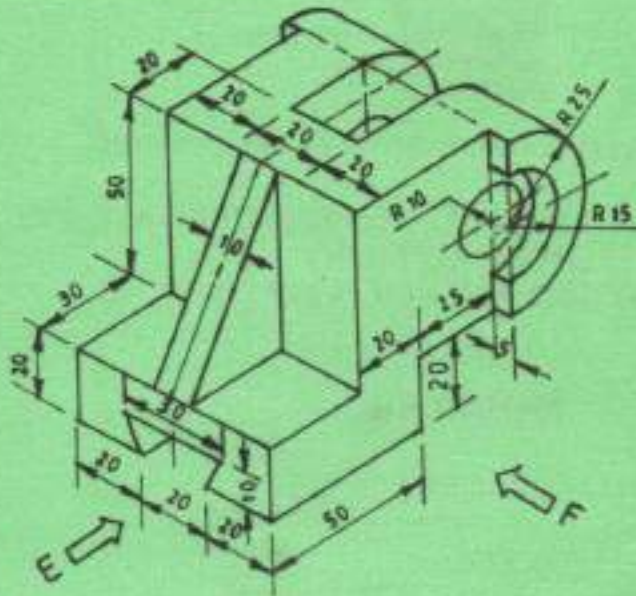


Fig.1

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)

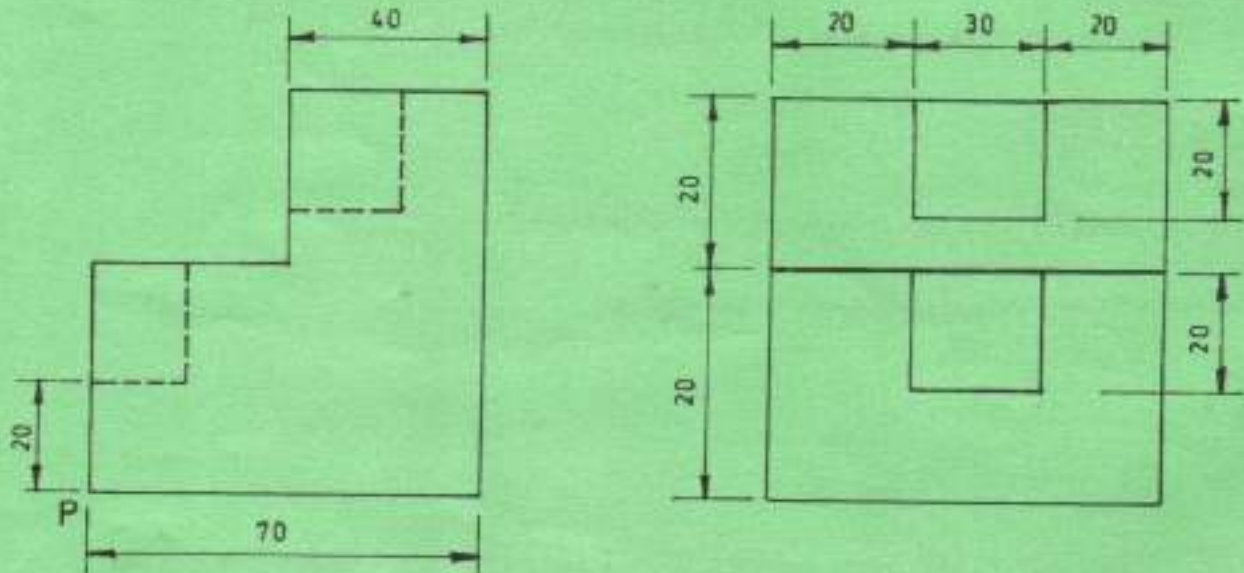


Fig.2

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

(i) flat screw driver;



(ii) fluorescent fitting;



(iii) deep pattern box;



(iv) flat file;



(v) single pole switch.



(15 marks)

(b) Draw the following electronic symbols:

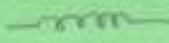
(i) light emitting diode;



(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)

*7.51 Angl
FV*



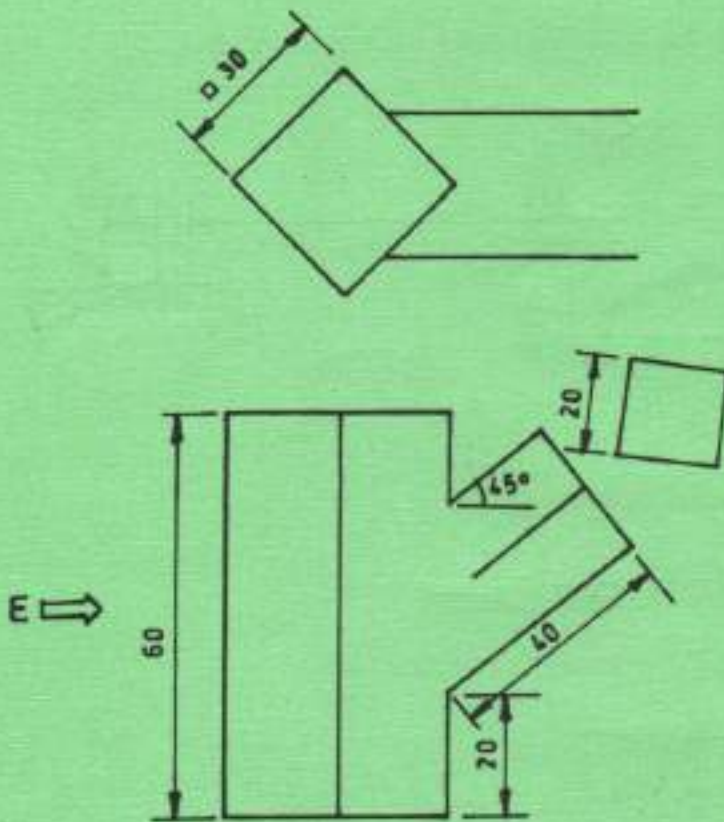


Fig. 3

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)

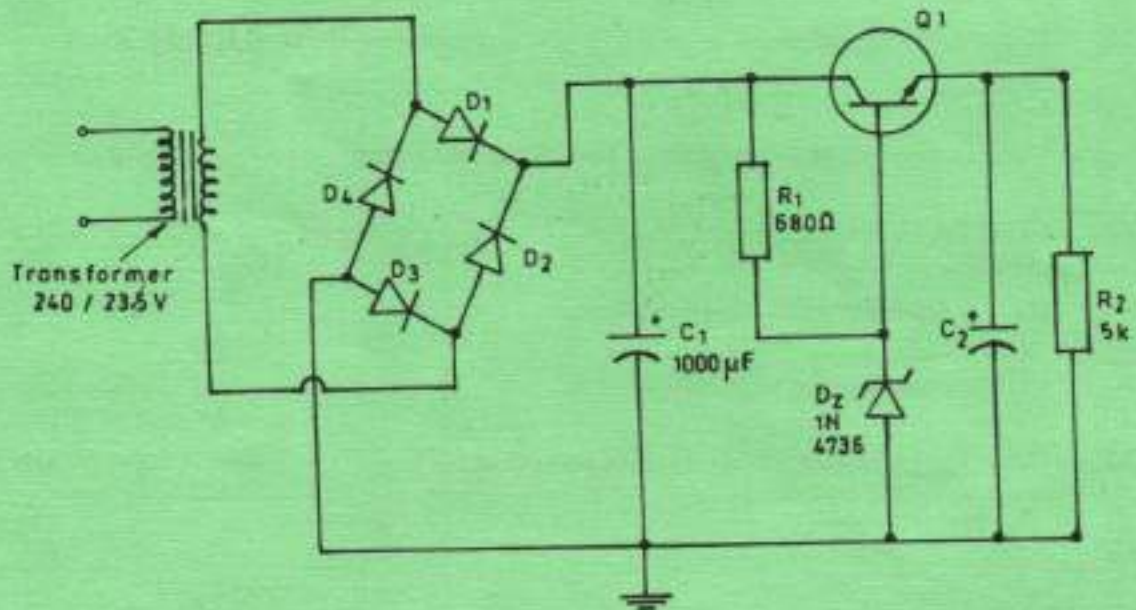


Fig. 4

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

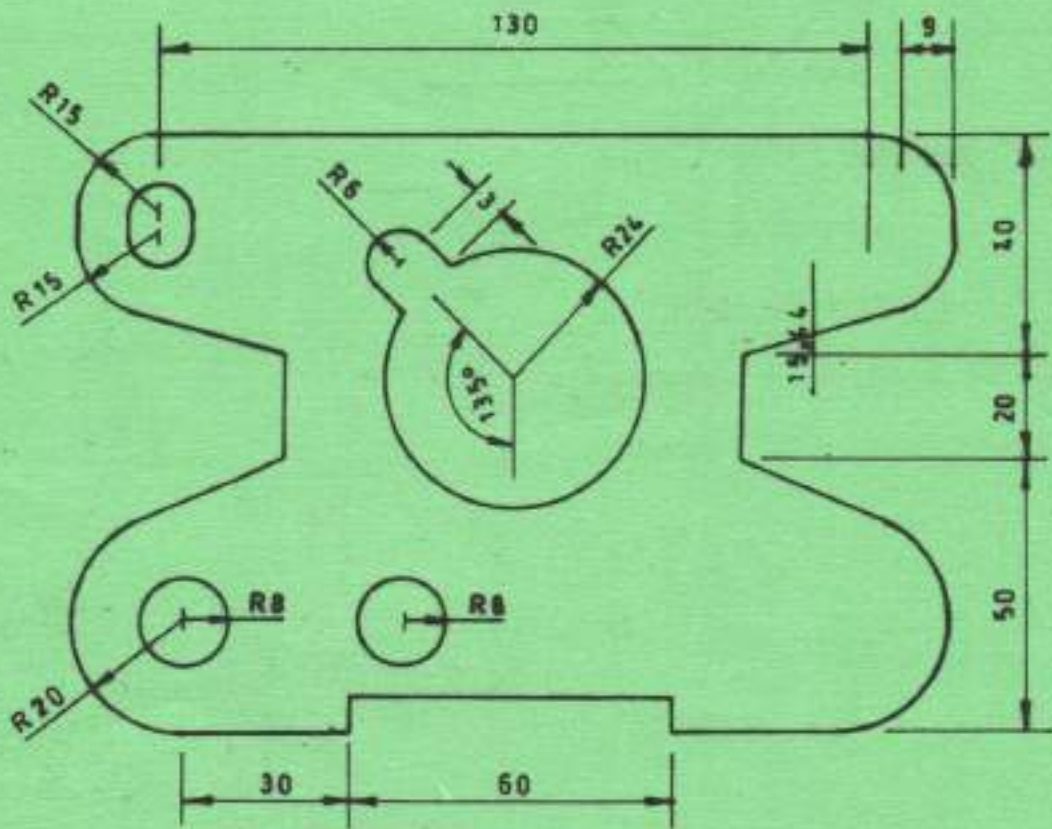
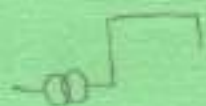


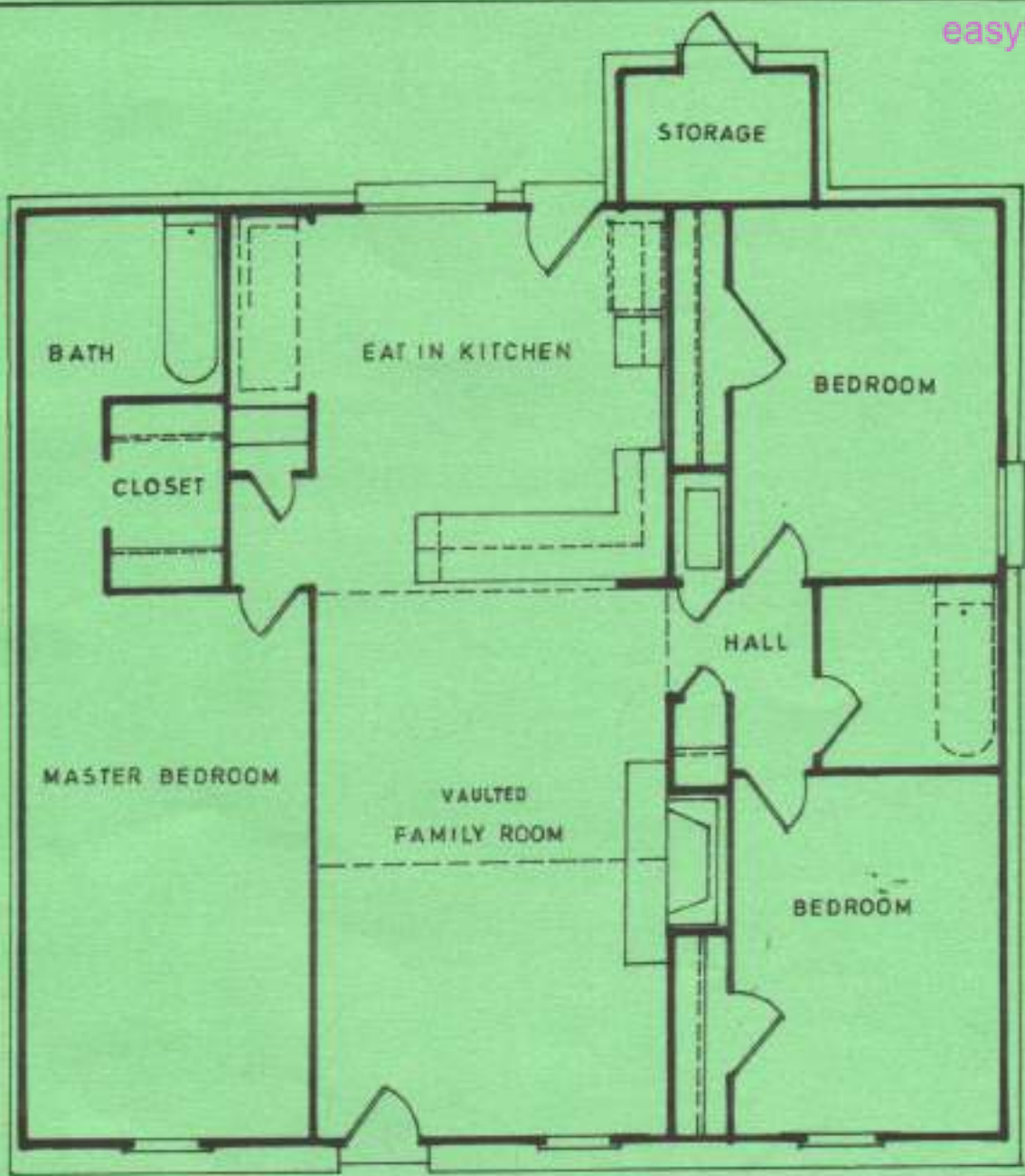
Fig.5



101
FV EV
PV
2nd
PV
EV FV

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		KEY	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
1		10	
2		11	
3		12	
4		13	
5		14	
6		15	
7			
8			
9			

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