

1601/106  
1602/106  
TRADE PRACTICE I  
Oct./Nov. 2019  
Time: 8 hours

OSCAR

0114



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**CRAFT CERTIFICATE IN ELECTRICAL AND ELECTRONIC TECHNOLOGY  
(POWER OPTION)  
(TELECOMMUNICATION OPTION)**

**MODULE I**

**TRADE PRACTICE I**

**8 hours**

**INSTRUCTIONS TO CANDIDATES**

*Each candidate will carry out ALL the exercises as directed by the examiner.*

*Time allowed for each question is 2 hours.*

*Performance of each candidate will be assessed **during and at the end** of every exercise.*

*Candidates will dismantle their own work.*

*NO circuit should be connected to **POWER** without the approval of the examiner.*

*All dimensions are in millimeters.*

*All electrical installations must be carried out in accordance with relevant regulations and practice.*

*All questions are **COMPULSORY**.*

*Candidates should answer the questions in English.*

**This paper consists of 5 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 domestic solar electrical installation. The solar module and its equipment are pre-installed.

- (a) Draw the wiring diagram;
- (b) Complete the wiring of the solar module and its control gear;
- (c) Using PVC mini trunking wiring system, install the circuit such that:
  - (i) the lamps are controlled from **three** positions;
  - (ii) socket outlets are wired in ring with a spur.
- (d) Carry out the polarity test.

(25 marks)

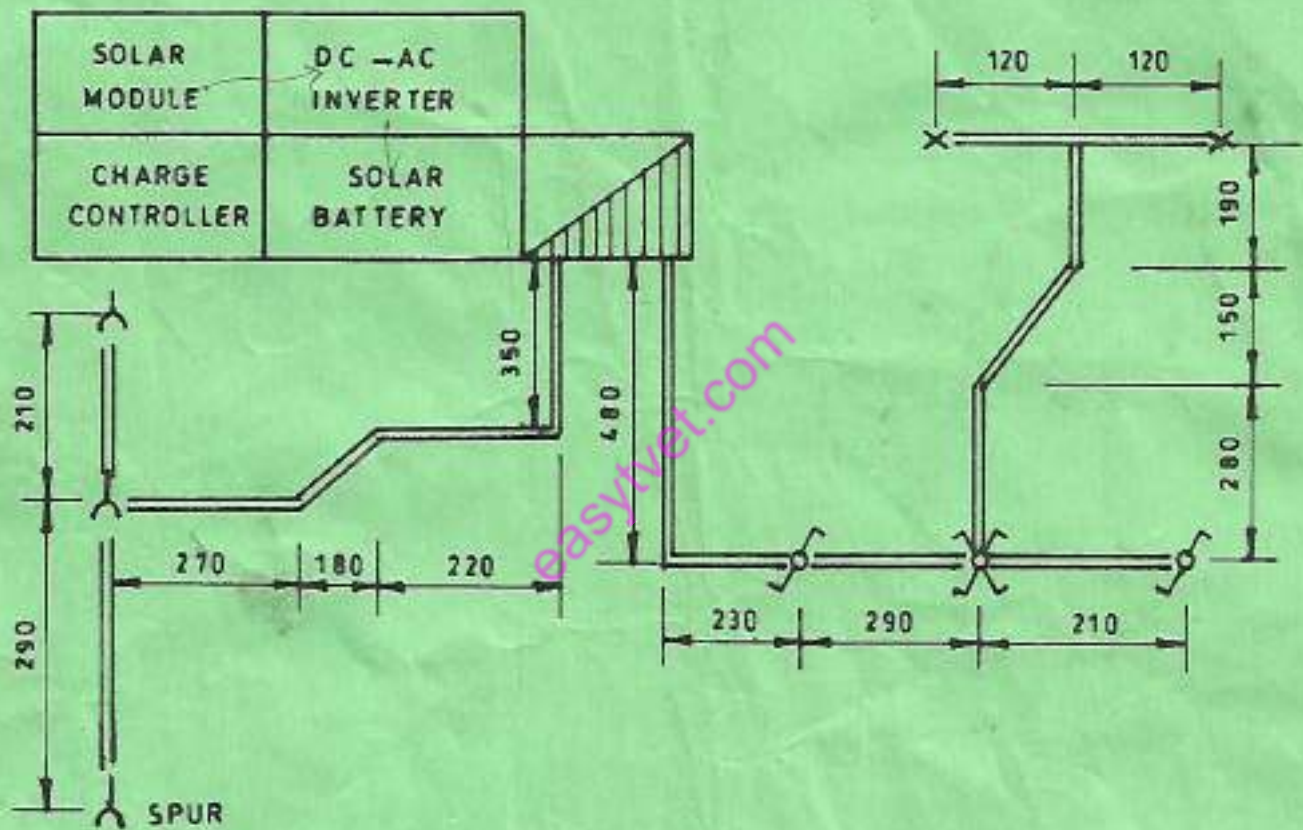


Fig. 1

2

Figure 2 shows the layout of the consumer's intake point equipment and three final circuits. The equipment at the consumer's intake point are pre-installed.

- (a) Draw the wiring diagram;
- (b) Complete the wiring of the equipment at the consumer's intake point. Using PVC sheathed wiring system, install the:
  - (i) lighting circuit such that lamp  $L_1$  and  $L_2$  are controlled by switch  $S_1$  and lamp  $L_3$  is controlled by switch  $S_2$ ;
  - (ii) Industrial socket outlet;
  - (iii) Water heater switch.
- (c) Carry out the insulation resistance test.

(25 marks)

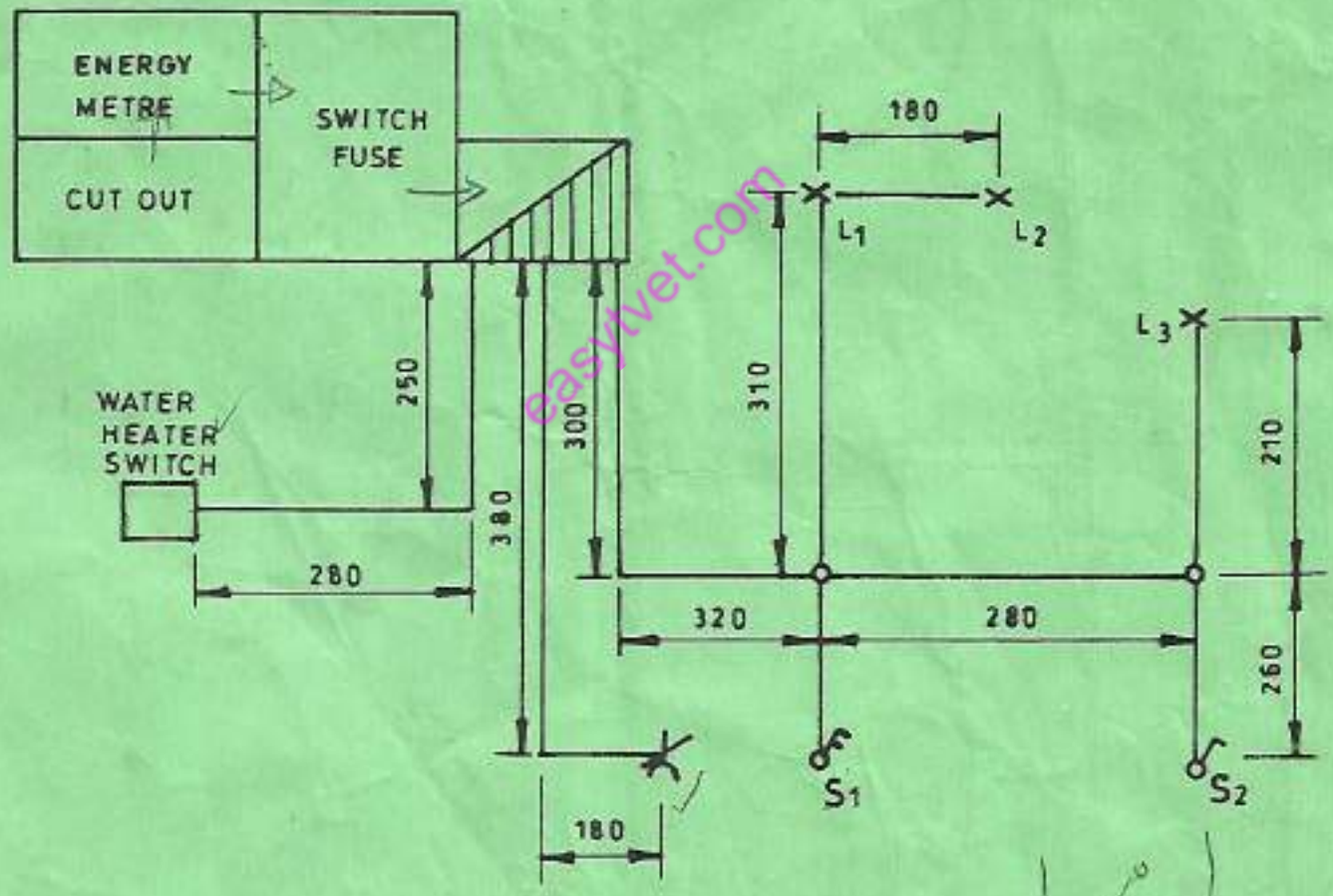


Fig. 2

3.

Figure 3 shows the layout of a metal template. Use the equipment, tools and materials provided to fabricate the template. (25 marks)

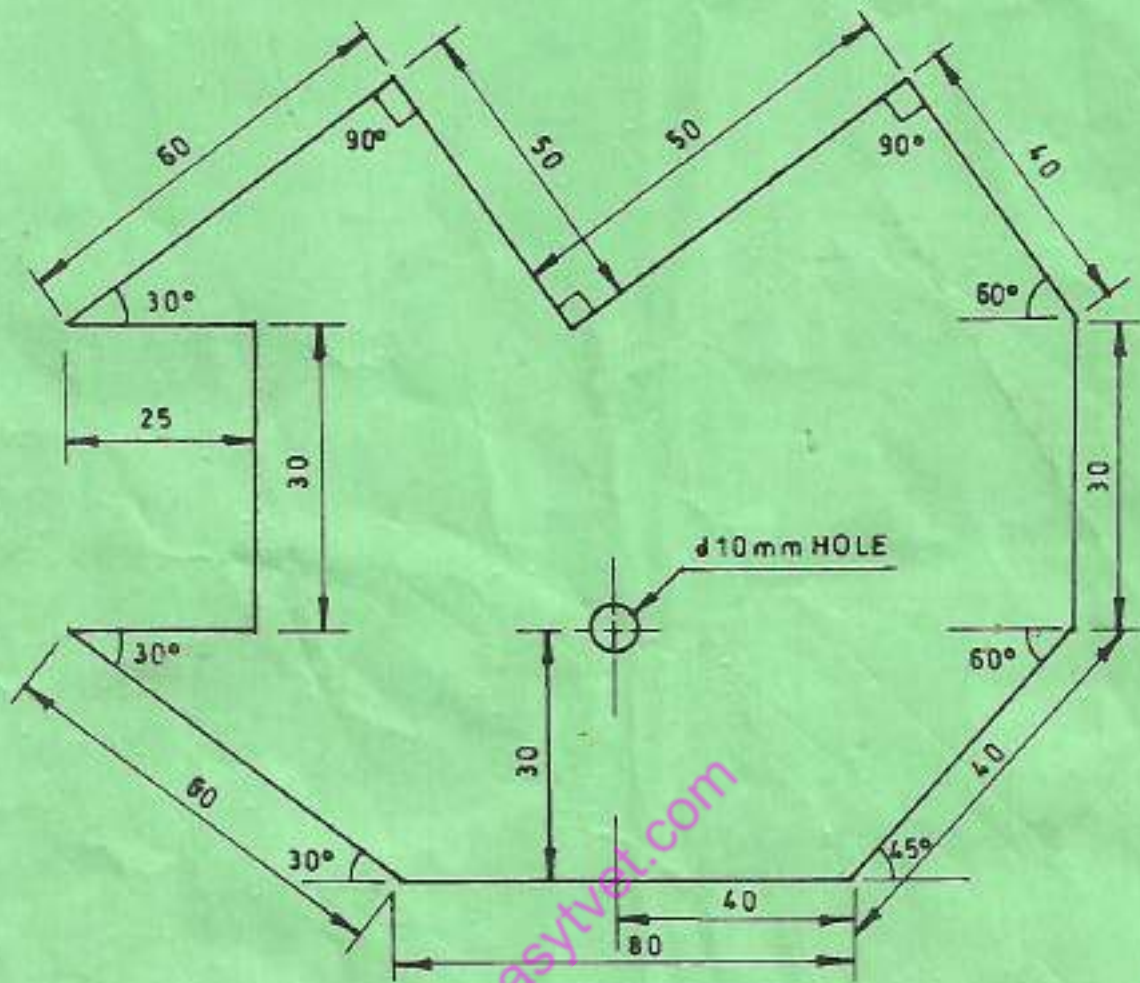


Fig. 3

Handwritten mark resembling a vertical line with a horizontal bar at the top and a small dot to the right.

4.

Figure 4 shows a stabilised d.c power supply.

- (a) Using the components and equipment provided, mount and solder the circuit on a copper strip board.
- (b) Measure current flowing through and voltage across the load resistor  $R_L$ .

(25 marks)

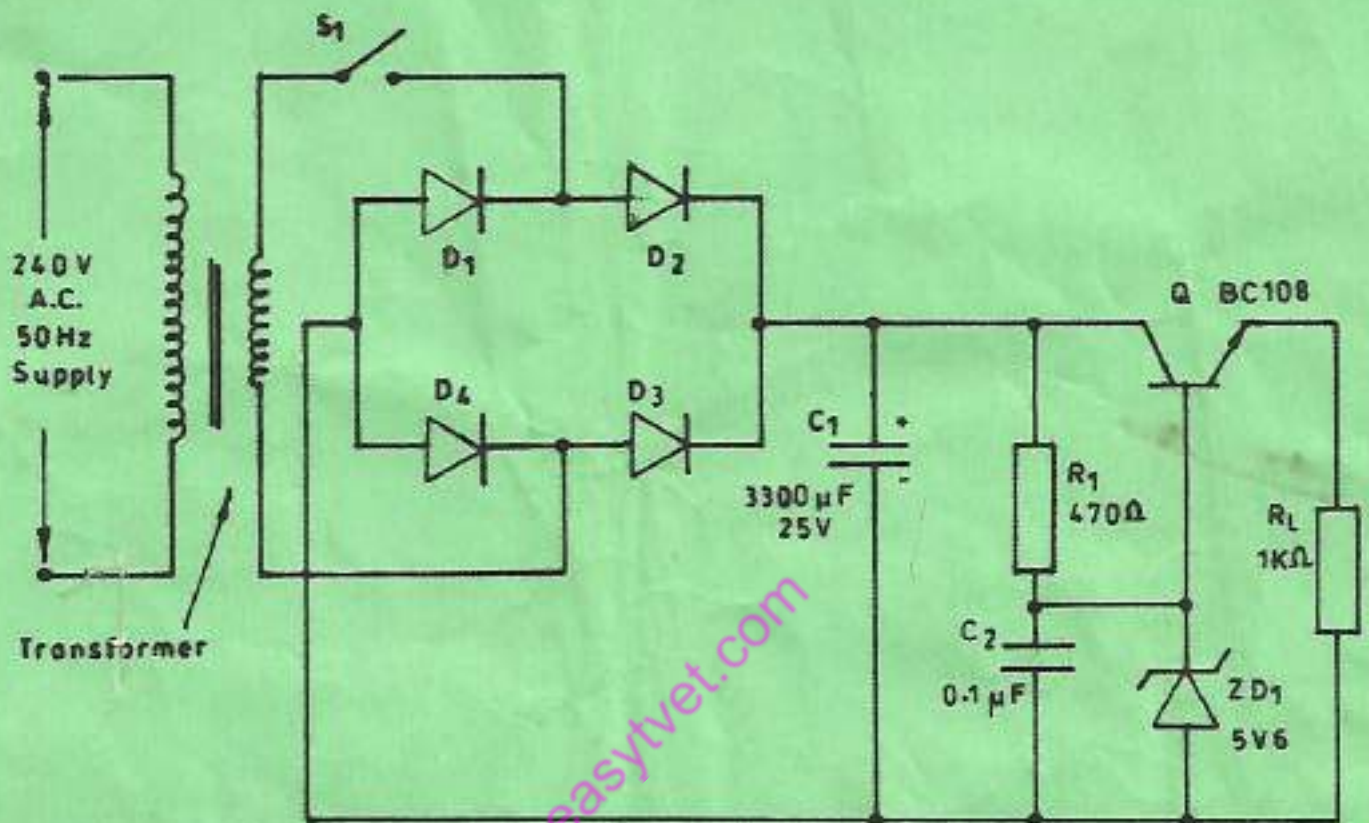


Fig. 4

THIS IS THE LAST PRINTED PAGE.