

1. Figure 1 shows the layout of control gear equipment and two final circuits. The control gear and consumer unit are pre-installed.
- Draw the wiring diagram of the installation.
 - Complete the wiring of the control gear.
 - Using PVC sheathed wiring system, install the circuits such that:
 - lamp is controlled from two different positions;
 - water heater is controlled separately at consumer unit.
 - Carry out the necessary installation tests. (25 marks)

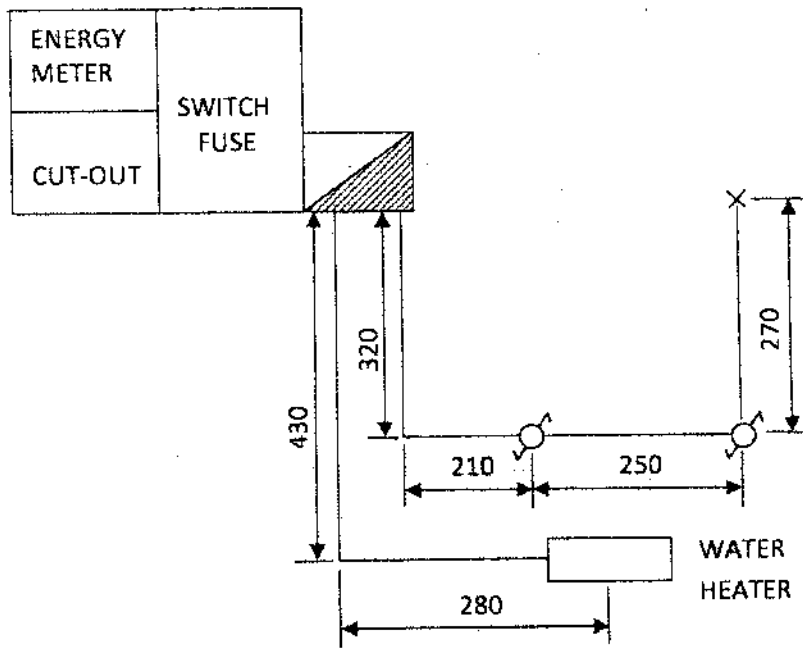


Figure 1

2. Figure 2 shows a domestic solar installation system with two final circuits. The solar control gear are pre-installed.

- a) Draw the wiring diagram of the installation.
- b) Complete the wiring of the control gear of the solar unit.
- c) Using PVC sheathed wiring system install the circuit such that the lamp L_1 is controlled by S_1 and L_2 is controlled by S_2 .
- d) Carry out the necessary tests.

(25 marks)

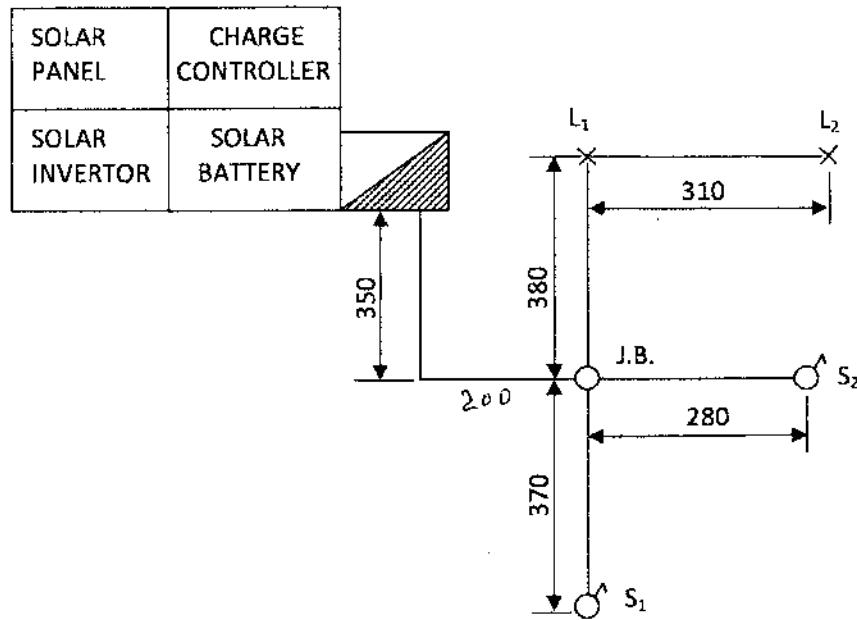


Figure 2

3. Figure 3 shows an electronic OPAMP amplifier circuit. Using tools, equipment and components provided:

- mount and solder the circuit on the copper strip board;
- vary the input voltage in the following steps and measure the corresponding output voltages;
- comment on the output of V_4 , V_5 and V_6 .

Input voltage	Output voltage
$V_1 = 0.00$	
$V_2 = 1.00$	
$V_3 = 1.25$	
$V_4 = 2.00$	
$V_5 = 2.50$	
$V_6 = 5.00$	

(25 marks)

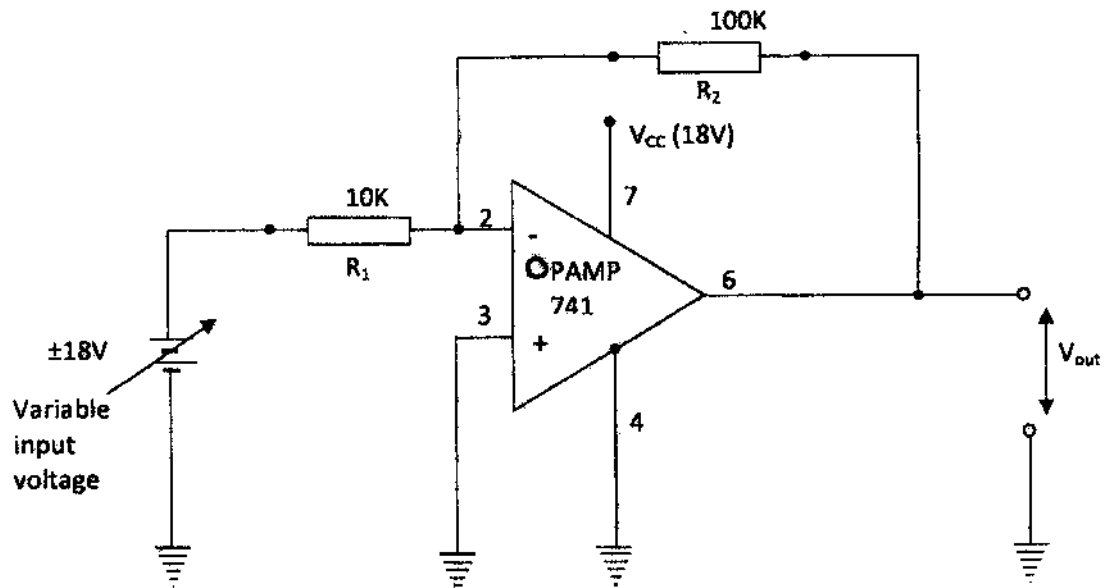


Figure 3

4. Figure 4 shows the views of an electronics circuit casing. Use tools, equipment and materials provided to make the casing for the circuit in question 3. (25 marks)

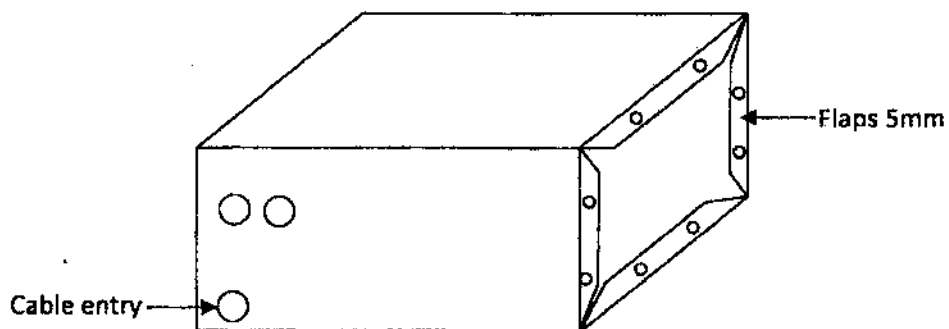
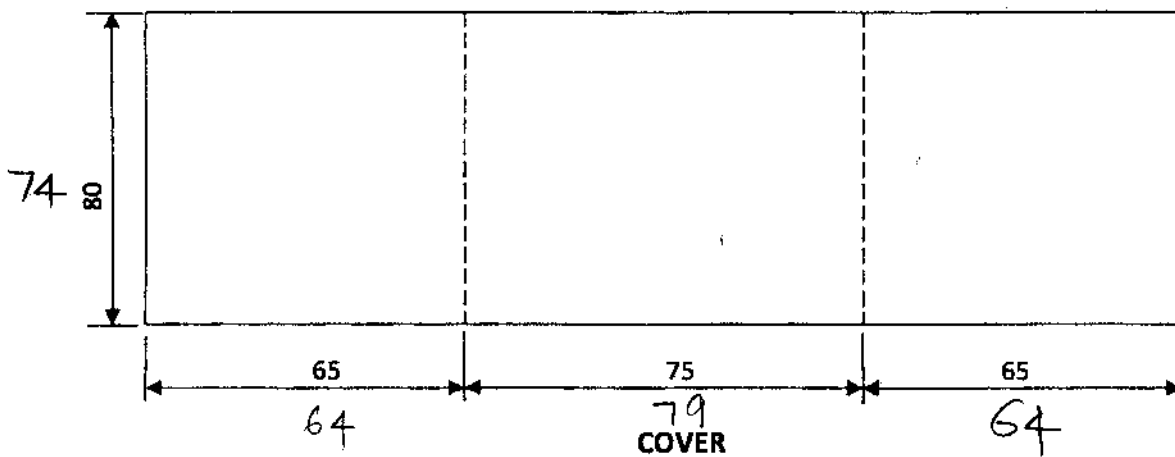
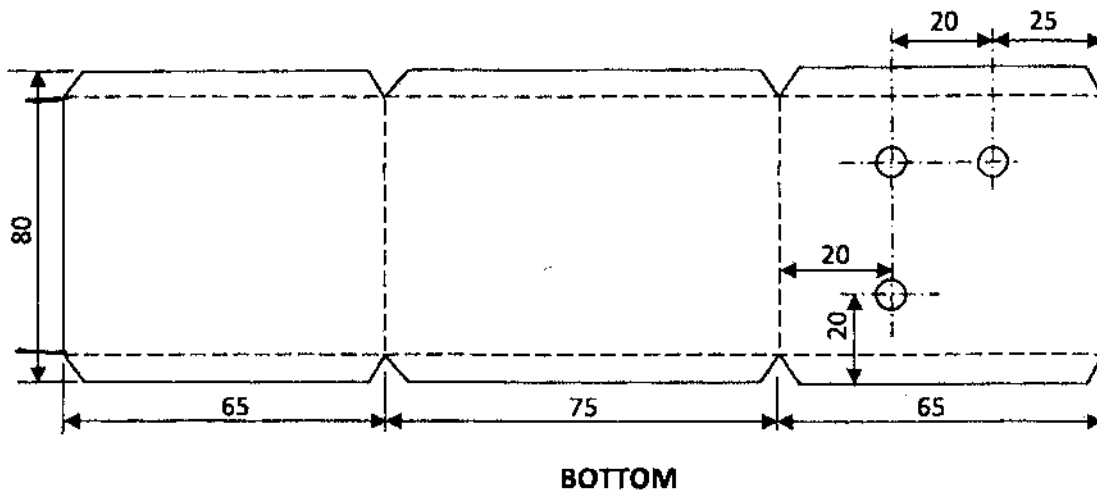


Figure 4