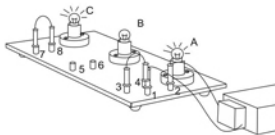


Step (3) : Repeat the step 2 with B and C bulbs by connecting wires in 5 and 6, 7 and 8 aluminium pins respectively. You will observe that in each case the bulbs glow independently.

Step (4): Now unplug wire of bulb B. You will observe that only bulb B goes off, where as the bulb A and C will remain glowing.



Repeat above step with respect to bulbs A and C. In each case you will observe that the respective bulbs goes off where as the remaining two bulbs will continue to glow.

What is going on ?

In case of series circuit all the bulbs glow simultaneously. If any one bulb goes off, the remaining bulbs will also go off. It is because the continuity of the circuit is broken.

Now imagine if this kind of i.e. series connected circuit is used in our households what will happen?

Suppose that the 3 bulbs in the series circuits corresponds to the bulbs in 3 rooms of a house. If bulb in any one room goes off, the bulbs in the remaining two rooms will also go off in that case to find out the faulty bulb we have to check the bulbs in all the 3 rooms. If the rooms are more imagine what would be the situation?

In case of parallel circuit, if any one bulb goes off, it will not affect the circuit. The continuity of the circuit will be intact and the remaining bulbs in will continue to glow.

Now imagine, if this kind of i.e., parallel connected circuit is used in our households what will happen ?

Again suppose that the 3 bulbs in the parallel circuit corresponds to the bulbs in 3 rooms of a house. If bulb in any one room goes off, the bulbs in the remaining two rooms will continue to glow. In this case you need not to search the other rooms to find out the faulty bulb.

This is how a parallel circuit has advantage over a series circuit. Therefore we use parallel circuit connection in domestic lighting.



DOMESTIC CIRCUITS (Series and Parallel)

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DOMESTIC CIRCUITS (Series and Parallel)

Advantages and disadvantages of series and parallel circuits.

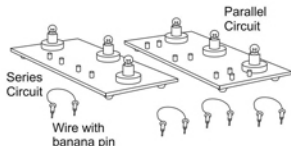
Assembly:

1) Series Circuits:

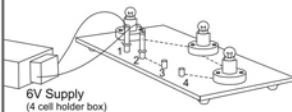
Consists of 3 bulb holders with 2.5 v bulbs connected in series with aluminium pins. 1 and 2 aluminium pin are used for supply of current through the circuit. 3 and 4 aluminium pins are used for switch on and off the circuit. For this a wire connected with two banana pins is provided with the kit.

Parallel Circuit:

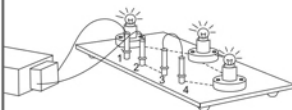
Consists of 3 bulb holders with 6v bulb connected in parallel with aluminium pins as shown in diagram. 1 and 2 pins are used for supply of current through the circuit. 3 and 4 aluminium pins are for switching on and off bulb-A. Similarly 5 and 6 and 7 and 8 aluminium pins are for B and C bulb respectively. Three wires each connected with 2 banana pins are part of the kit. Use 6v D.C supply to perform the experiment.



To do and Observe : Series circuit:

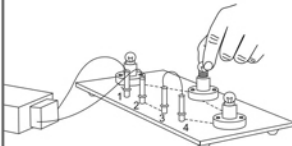


Step 1: connect 6v supply to the aluminium pin 1 and 2



step 2 : connect the wire with banana pins to the aluminium pin 3 and 4.

You will observe that all the bulbs, glow simultaneously, with almost equal intensity.

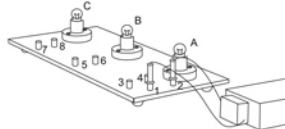


Step(3) Now unscrew any one bulb out of the 3 bulbs, you will observe that the remaining bulbs will also be switched off.

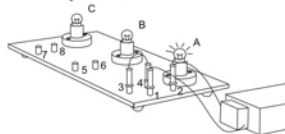
Step(4) Fix the unscrewed bulb again in its position and you will observe that all the bulbs glow again.

Step(5) Unplug the supply

Parallel Circuit:



Step(1) connect the 6v supply to the aluminium pins 1 and 2



Step(2) connect the wire with banana pins to aluminium pins 3 and 4 (as shown in diagram). You will observe that only bulb A glows.

