

In step 2 when you insert one diode it gets forward biased during +ve half cycle of the ac input and therefore gives output. Where as in -ve half cycle, it is cut off as the diode gets reverse biased. Therefore the bulb glow with low intensity.

In step 4 when you insert another diode, the two diodes are connected in such a manner that one diode gets forward biased during first half cycle of ac input, the other gets reverse biased. But when the next opposite half cycle comes, the first diode gets reverse biased and the second forward biased. Thus output is obtained during both half cycles of the ac input. As a result of this, the bulb glows with more intensity.



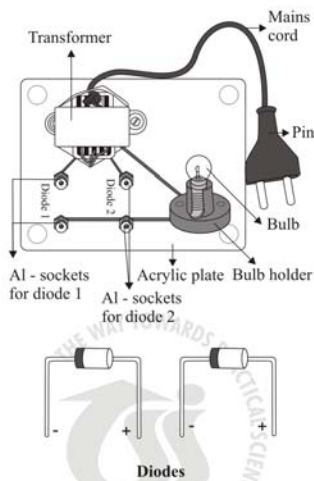
HALF WAVE and FULL WAVE RECTIFIER

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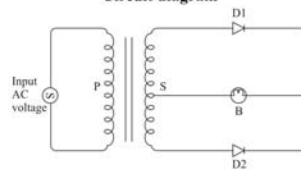
HALF WAVE AND FULLWAVE RECTIFIER

Action of a diode as a rectifier.

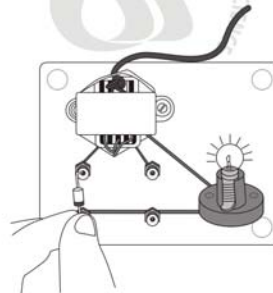
Assembly : Consists of a transformer (6-0-6v, 750mA), a bulb holder with a bulb, four aluminum sockets and ac mains cord fixed on a 5 mm clear acrylic plate with wire connected as per the circuit diagram shown below. Two diodes are part of the kit.



Circuit diagram

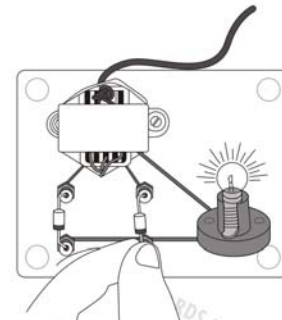


To do and observe:
Step 1 : Connect the AC mains cord pin to the mains and switch it on.
Step 2 : Insert one diode in the aluminum sockets provided for diode 1 as shown in the diagram. You will observe that the bulb glowing with a low intensity.



Step 3 : Now insert second diode in the aluminum sockets provided for it as shown in the diagram. You will observe that the bulb glowing with more intensity compared to the intensity in step 2.

Note : It could be done vice - versa also first D2 and then D1 and D2.



Step 4 : Remove the diodes, and switch off the mains and remove the pin from mains.

What is going on ?

Rectification action is based on the principle that junction diode offers low resistance path when forward biased and high resistance when reverse biased. When an ac input is applied to junction diode, it gets forward biased during one half cycle and reverse biased during next opposite half cycle. Thus output is obtained during alternate half cycles of the ac input.