

Experiment - 18 : Identification of diode, LED resistor, a capacitor from a mixed collection of such items.

Apparatus : Multimeter, battery, eliminator, reversing key.

Theory

For identification, appearance and working of each item will have to be considered.

1. A diode is a two-terminal device. It conducts when forward biased and does not conduct when reverse biased. It does not emit light while conducting.
2. A LED (light emitting diode) is also a two-terminal device. It also conducts when forward biased and does not conduct when reverse biased. It emits light while conducting.
3. A resistor is a two-terminal device. It conducts when either forward biased or reverse biased. (Infact there is no forward or reverse bias for a resistor). It conducts even when operated with A.C. voltage.
4. A capacitor is also a two-terminal device. It does not conduct when either forward biased or reverse biased. (Hence it does not conduct with D.C. voltage). However, it conducts with A.C. voltage.

Procedure

If the item has two terminals, it may be diode, a LED, a resistor or a capacitor.

Make a series circuit with battery eliminator, reversing key, the item and the multimeter with range set in milliamperes. Switch on the battery eliminator and watch the movement of the multimeter pointer.

If pointer moves when voltage is applied in one way and does not move when reversed and there is no light emission, the item is a diode. h If pointer moves when voltage is applied in one way and does not move when reversed and there is light emission, the item is a LED.

If pointer moves when voltage is applied in one way and also when reversed, the item is a resistor.

If pointer does not move when voltage is applied in one way and also when reversed, the item is a capacitor.