

What are Light-Emitting Diodes?

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About Light-Emitting Diodes

- A diode is an electronic component which has two points of contact, or terminals, called its anode and cathode.
- A diode's primary purpose is to allow current to flow in only one direction.
- An LED is a semiconductor device which emits light when electric current flows through it.
- It can produce all three primary colours – red, green, and blue – different LEDs can be combined on a display board to produce a large variety of colours.

Advantages of LED

- **Energy Efficiency:** It requires far less electricity to produce the same light as incandescent bulbs. LEDs use approximately 75-80% less energy than traditional incandescent bulbs
- **Durability:** LED bulbs are highly durable and resistant to shocks, vibrations, and temperature fluctuations.
- **Instant Illumination:** It provides instant illumination without the warm-up period required by incandescent bulbs.

- Heat Generation: LED bulbs generate very little heat, making them safer to handle and more efficient in terms of energy utilization.
- Environmental Impact: LEDs have a significantly lower environmental impact compared to incandescent. The energy efficiency and longer lifespan result in reduced greenhouse gas emissions and less waste.

What are the Applications of LEDs?

- LEDs have several applications in industry, consumer electronics, and household appliances: from smartphones to TV screens, from signboards to 'feeding' plants light in greenhouses, from barcode scanners to monitoring air quality.
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Q1) What is a semiconductor?

It is a substance that has specific electrical properties that enable it to serve as a foundation for computers and other electronic devices. It is typically a solid chemical element or compound that conducts electricity under certain conditions but not others.

Source: [What are light-emitting diodes and why are they prized as light sources? | Explained](#)

Source: <https://vajiramandravi.com/current-affairs/led/>

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