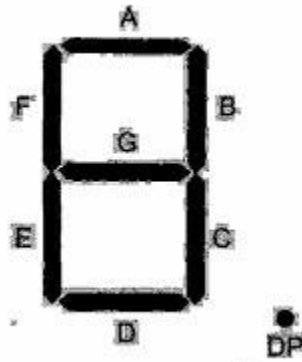


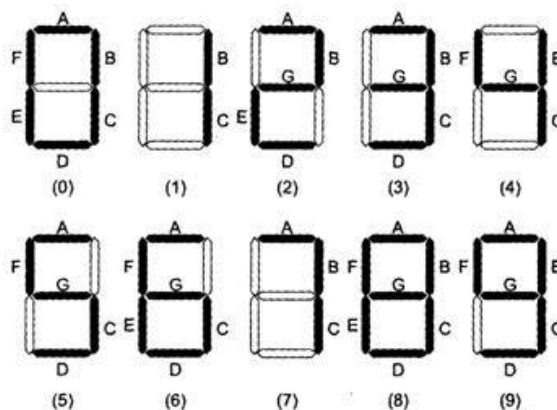
SEVEN SEGMENT DISPLAY

A display consisting of seven LEDs arranged in seven segments is called seven segment display. It is shown in the Fig. The seven LEDs are arranged in a



rectangular fashion and are labeled A through G. Each LED is called a segment because it forms a part of the digit being displayed. An additional LED is used for the indication of a decimal point (DP).

By forward biasing different LEDs we can display the digits 0 through 9. For example, to display a zero, the LEDs A, B, C, D, E and F are forward biased. To light up a 5, we need to forward bias segments A, F, C, C, D. Thus in a seven segment display depending upon the digit to be displayed, the particular set of LEDs is forward biased. The various digits from 0 to 9 which can be displayed using seven segment display are shown in the Fig.



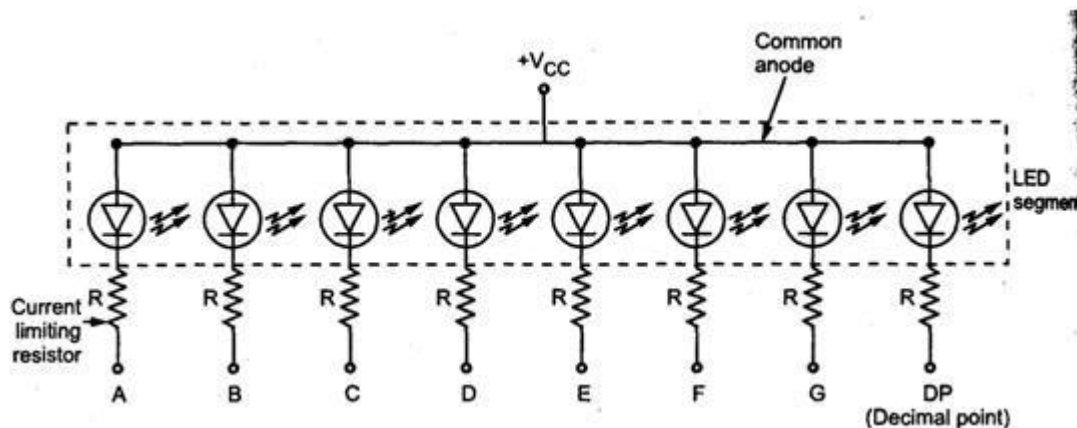
Types of Seven Segment Display

The two types of seven segment display are available called,

- 1) Common anode type
- 2) Common cathode type

Common Anode Type

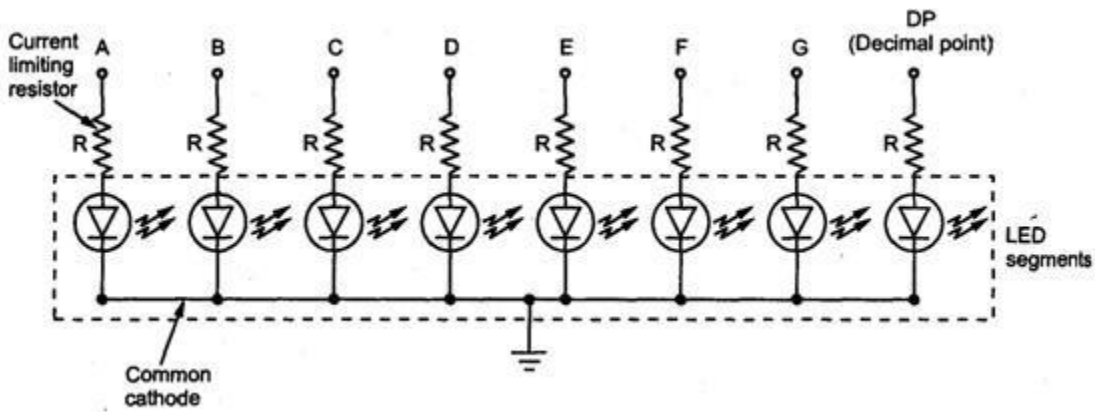
In this type, all anodes of LEDs are connected together and common point is connected to $+V$ which is positive supply voltage. A current limiting resistor is required to be connected between each LED and ground.



Common Cathode Type

In this type, all cathodes of LEDs are connected together and common point is connected to the ground. A current limiting resistor is connected between each

LED and the supply $+V_{cc}$. The anodes of the respective segments are to be connected to $+$ for the required operation of LEDs.



LED Driver Circuit

The output of a digital circuit is logical i.e. either 0 or 1. The '0' means low while 1' means high. In the high state the output voltage is nearly 5V while in low state, it is almost 0V. If LED is to be driven by such digital circuit, it can be connected as shown in the Fig. When output of digital circuit is high, both ends of LED are at 5V and it can not be forward biased hence will not give light. While when output of digital circuit is low, then high current will flow through LED as it becomes forward biased, and it will give light.

