

## EXPERIMENT: 10      BCD TO 7-SEGMENT DECODER/DRIVER

AIM: To set up and test a 7-segment static display system to display numbers 0 to 9.

### LEARNING OBJECTIVE:

- To learn about various applications of decoder
- To learn and understand the working of IC 7447
- To learn about types of seven-segment display

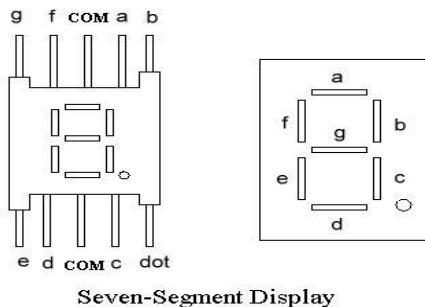
### COMPONENTS REQUIRED:

IC7447, 7-Segment display (common anode), Patch chords, resistor (1K ) & IC Trainer Kit

### THEORY:

The Light Emitting Diode (LED) finds its place in many applications in these modern electronic fields. One of them is the Seven Segment Display. Seven-segment displays contains the arrangement of the LEDs in “Eight” (8) passion, and a Dot (.) with a common electrode, lead (Anode or Cathode). The purpose of arranging it in that passion is that we can make any number out of that by switching ON and OFF the particular LED's. Here is the block diagram of the Seven Segment LED arrangement.

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LED's are basically of two types-

Common Cathode (CC) -All the 8 anode legs uses only one cathode, which is common.

Common Anode (CA)-The common leg for all the cathode is of Anode type.

A decoder is a combinational circuit that connects the binary information from 'n' input lines to a maximum of  $2^n$  unique output lines. The IC7447 is a BCD to 7-segment pattern converter. The IC7447 takes the Binary Coded Decimal (BCD) as the input and outputs the relevant 7 segment code.