# DIGITAL DICE WITH NUMERIC DISPLAY

The circuit described here is that of a digital dice with numeric display. Timer IC 555 wired as an astable multivibrator produces pulses at about 48 kHz rate. These pulses are fed to pin 14 of the decade counter IC 7490. The oscillator is activated by depression of switch S1.

Using different connections tor pins 2, binary output pins of the counter IC2 are connected to corresponding input pins of 4-bit binary adder IC3 (7483) which is wired to give binary output equal to binary input+1. Thus the output of the dice ranges from 1 to 6. For obtaining other dice ranges, reset pins 2 and 3 connections may be made as per Table I.

The binary summation outputs from

TABLE I		
Dice range	Connect pin 2 to	Connect pin 3 to
1 to 2	pin 9	+5V
1 to 3	pin 9	pin 12
1 to 4	pin 8	+5V
1 to 5	pin 8	pin 12
1 to 6	pin 8	pin 9
1 to 8	pin 11	+5V
1 to 9	pin 11	pin 12
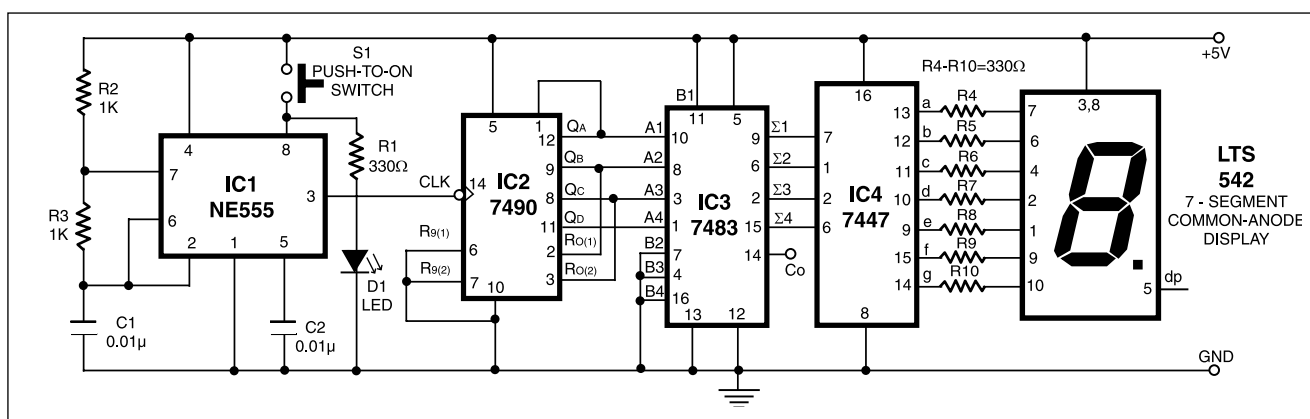
3 (reset to zero inputs Ro(1) and Ro(2)) and the binary output pins 12, 9, 8 and 11 of IC7490, various count ranges can be set. For the given circuit the count range is set as 0 to 5 by connecting QB and QC outputs to Ro(1) and Ro(2) inputs, respectively.

At the count of 6, QB and QC outputs of IC2 go high and counter is reset. The IC 7483 are connected to IC4 (7447) which is a BCD to 7-segment decoder/driver. The output from IC4 is connected to a 7-segment common-anode LED display (LTS542).

When switch S1 is depressed, the LED (D1) glows and the number displayed at the 7-segment display changes at a rate of about 48,000 times per second. As soon as the switch is released, the last (latest) number remains on display. Thus the circuit performs the function of a random number generator with the displayed number lying within the selected (wired) range.