LAB TEST – II

(Thursday batch)

Time: 2 hours

Design and implement a system on the simulator that generates and displays two digits (on two seven-segment display units) the sequence of the Fibonacci series that is defined as:

$$f(n) = f(n-1) + f(n-2)\ ,\ \text{where } f(0) = 0 \text{ and } f(1) = 1\ .$$

The generated sequence should be 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, . . . (continues indefinitely).

The system should have a RESET line, which will reset the displays to 00 when activated. When the reset signal is withdrawn (deactivated) the system starts and continues to generate the sequence until RESET signal is activated again (or the simulation is stopped).

You need NOT have to display in the BCD format. Hex format is acceptable (*i.e.* 21 in decimal may be displayed as 15 in hex). Characters like ⊏ or ⊐ is also acceptable as long as you can interpret the results. When the value of the output is more than 255 in decimal (*i.e.* FF in hex), the display will be truncated (showing only 2 least significant hex digits). However, you may check the expected result in that case too. For example, a value of 377 in decimal will be displayed as 79 in hex (*i.e.* 121 in decimal) after truncation.

Note down the observations in the following Table (make a similar hand-drawn Table) for at least 25 entries and indicate whether truncated or not:

Roll No.: _____ Name: _____

Obs. No.	Computed value (Theoretical)	Actual display (as per simulation)	Decimal interpretation	Truncated (Yes/No)
1				
2				
3				
4				
...				
...				
...				
25				

Scan the hand-drawn filled up Table and upload the same (along with the schematic file) through the link provided in the mail.

☺ Wishing you a Happy Simulation session ☺