

Course Code	Course Name	Credits
26PH155	DIGITAL ELECTRONICS LAB	02

Objective

The objective of this laboratory course is to enable students to understand and verify fundamental principles of digital electronics through experimental methods. Students will develop practical skills in conducting experiments, taking accurate measurements, analyzing data, and interpreting results.

1. Execute a programme for multiplication & division of two 8 bit numbers by using microprocessor 8085.
2. Verify the BCD to Binary Number conversion circuit.
3. Study of logic gate using ICs – NOT, OR, AND, NOR, NAND, XOR, XNOR
4. Verify the De Morgan's theorem using ICs – NOT, OR, AND
5. Confirm NAND and NOR as universal building block.
6. Study the working of Half adder and Half subtractor using basic logic gate ICs
7. Perform the addition and subtraction of 8 bit number using Microprocessor 8085.
8. Perform the largest and smallest of numbers of 8 bit number using Microprocessor 8085.
9. Perform the sum of a string of data using Microprocessor 8085.
10. Verify the Excess-3 to BCD converter & Vice versa
11. Study the MUX / DEMUX using 74153 & 74139.
12. Study the MUX / DEMUX using only NAND gates.
13. Verify the encoder and decoder truth tables using ICs.
14. Design and analysis of basic the Flip-Flop circuits using ICs.
15. Study of Counters using ICs.
16. Design and analysis of shift registers using ICs.
17. Study and verify the working of Ring counters.
18. Study a digital Sequence generator using ICs.
19. Study and verify the working of a BCD to 7-segment decoder using 7-segment LED Display.
20. Verify the Full adder full subtractor using basic logic gate ICs.

Students are required to perform and record at least eight experiments in the laboratory manual as part of the course requirements.