I BCA – I Semester

Digital Lab

I. Study of Logic Gates

1. Logic Gates using discrete components.
2. Verification of truth table for AND, OR, NOT,NAND, NOR using XOR gates.
3. Realization of NOT, AND, OR, EX-OR gates with only NAND gates.
4. Realization of NOT, AND, OR, EX-OR gates with only NOR gates.

II. Implementation of Logic Circuits

1. Verification of Associative Law for AND, OR gates.
2. Karnaugh's Map reduction and logic circuit implementation.

III. Adder and Subtractor

1. Verification of Demorgan's Law
2. Implementation of Half-Adder and Half-Subtractor.
3. Implementation of Full-Adder and Full -Subtractor.
4. Four bit binary Adder.
5. Four bits binary subtractor using 1s and 2s complements.

IV. Shift registers

1. Implementation of Shift Registers. Serial Transfer.
2. Ring Counter.
3. 4 – bit binary counter.
4. BCD Counter.
5. Counters for arbitrary sequence.