

Sl. No.	Topic of Assignment	CO	PO and PSO mapping
1	Verify basic gates – AND, OR, NOT	MCA 191.1	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
2	Verify gates – EXOR, NAND, NOR	MCA 191.1	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
3	Prove that NAND/ NOR gate as universal gate	MCA 191.1	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
4	Design and implement EXOR gate using NAND gate	MCA 191.1	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
5	Implement half adder circuit.	MCA 191.2	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
6	Implement full adder circuit	MCA 191.2	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
7	Implement half subtractor circuit.	MCA 191.2	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
8	Implement full subtractor circuit	MCA 191.2	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
9	Design and implement 4- bit parallel adder circuit	MCA 191.2	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
10	Design and implement 4-bit BCD adder circuit	MCA 191.2	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
11	Design and implement 4- bit adder-subtractor composite circuit	MCA 191.2	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
12	Verify 2x4, 3x8 decoder	MCA 191.3	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
13	Implement a 3x8 decoder using two 2x4 decoder	MCA 191.3	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
14	Verify 4x1, 8x1 MUX	MCA 191.4	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
15	Design and implement 16x1 MUX using two 8x1 MUX and a 2x1 MUX	MCA 191.4	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂

16	Implement SR, D, JK, T flipflop using NAND	MCA 191.5	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂
17	Design and implement 3-bit gray code synchronous counter	MCA 191.6	PO1, PO2, PO3, PO4 PSO1, PSO2
18	Design and implement MOD 10/ BCD synchronous	MCA 191.6	PO ₁ , PO ₂ , PO ₃ , PO ₄ PSO ₁ , PSO ₂