Techno India NJR Institute of Technology

Academic Administration of Techno NJR Institute

Lab Deployment

Name of Faculty: Mr. Yogendra Singh Solanki	Subject Code: 3EC4-22
Subject Name: Digital System Design Lab	Semester: III
Department: Department of Electronics and Communication Engineering	
Total No. of Lectures Planned: 11	

COURSE OUTCOMES

At the end of this course students will be able to:

CO 1 To minimize the complexity of digital logic circuits.

CO 2 To design and analyse combinational logic circuits.

CO 3 To design and analyse sequential logic circuits.

CO 4 Able to implement applications of combinational & sequential logic circuits.

Lab No.	Name of Experiment
1	To verify the truth tables of logic gates: AND, OR, NOR, NAND, NOR, Ex-OR and Ex-NOR
2	To verify the truth table of OR, AND, NOR, Ex-OR, Ex-NOR logic gates realized using NAND & NOR gates.
3	To realize Half adder/ Subtractor& Full Adder/ Subtractor using NAND & NOR gates and to verify their truth tables
4	To realize a 4-bit ripple adder/ Subtractor using basic Half adder/ Subtractor& basic Full Adder/ Subtractor.
5	To design 4-to-1 multiplexer using basic gates and verify the truth table. Also verify the truth table of 8-to-1 multiplexer using IC

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6	To design 1-to-4 demultiplexer using basic gates and verify the truth table. Also to construct 1-to-8 demultiplexer using blocks of 1-to-4 demultiplexer
7	To design 2x4 decoder using basic gates and verify the truth table. Also verify the truth table of 3x8 decoder using IC
8	Using basic logic gates, realize the R-S, J-K and D-flip flops with and without clock signal and verify their truth table.
9	Construct a divide by 2, 4 & 8 asynchronous counter. Construct a 4-bit binary counter and ring counter for a particular output pattern using D flip flop.
10	Design and construct BCD ripple counter and verify the function.
11	Design and construct a 4 Bit Ring counter and verify the function.

TEXT/REFERENCE BOOKS

1. Modern Digital Electronics, R.P Jain, Tata McGraw-Hill Education
2. Digital Circuit & Logic Design, Morris Mano, Prentice Hall of India
3. Digital Principles & Applications, A.P.Malvino & D.P Leach, Tata McGraw-Hill Education