

GOVERNMENT POLYTECHNIC ,BARGARH
Department Of Computer Science Engineering

Semester: 3RD . DIPLOMA

Subject: DE LAB(OLD)

Branch: CSE

Session: WINTER

No of Period :60(4p/week)

Name of Faculty: Niranjana Nayak

Week	Period	Topics to be Covered
1	1	Demonstration of Experiments of different types of ICS, gates and Combinational Circuits.
2	2	Familiarization of Digital Trainer Kit, logic Pulser Logic Probe & Digital ICs IE 7400, 7402, 7404, 7408, 7432 & 7486.(draw their pin diagram and features).
3	3	Verify truth tables of AND, OR, NOT, NOR, NAND, XOR, XNOR gates & simplifications of Boolean gates.
4	4	Implement various gates by using universal properties of NAND & NOR gates verify and truth table tabulate data.
5	5	Construct & verify operation of Half adder and Full adder using logic gates.
6	6	Construct & verify operation of Half subtractor and Full subtractor using logic gates.
7	7	Design & Implement a 4-bit Binary to Gray code converter.
8	8	Design & Implement a Single bit/ two bit digital comparator circuit.
9	9	Design Multiplexer (4:1) and De-multiplexer (1:4).
10	10	Demonstration of Experiments of different types of Flip-Flops Counters, Shift registers and display device.
11	11	Study the operation of flip-flops (i) S-R flip flop (ii) J-K flip flop (iii) D flip flop (iv) T flip flop.
12	12	Realize a 4-bit asynchronous UP/Down counter with a control for up/down counting.
13	13	To Study shift registers and display devices LED, LCD, 7-segment displays.
14	14	Verify the operation 8-bit D /A and A/ D conversion & test its performance.
15	15	Mini Project : To collect data like pin configurations, display devices, Operational characteristics, applications and critical factors etc. on all digital ICs studied in theory and compile a project report throughout and submit at the end of the semester. To assemble and tests circuits using above digital ICs with test points e.g. Digital Clock / Frequency Counter / Running Glow Light upto 999/Solar cell & Opto coupler applications.