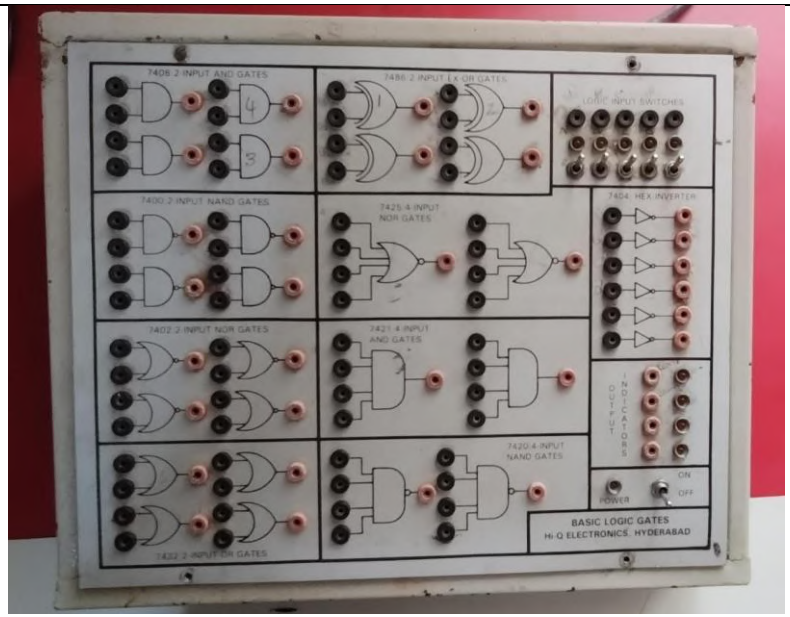
MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

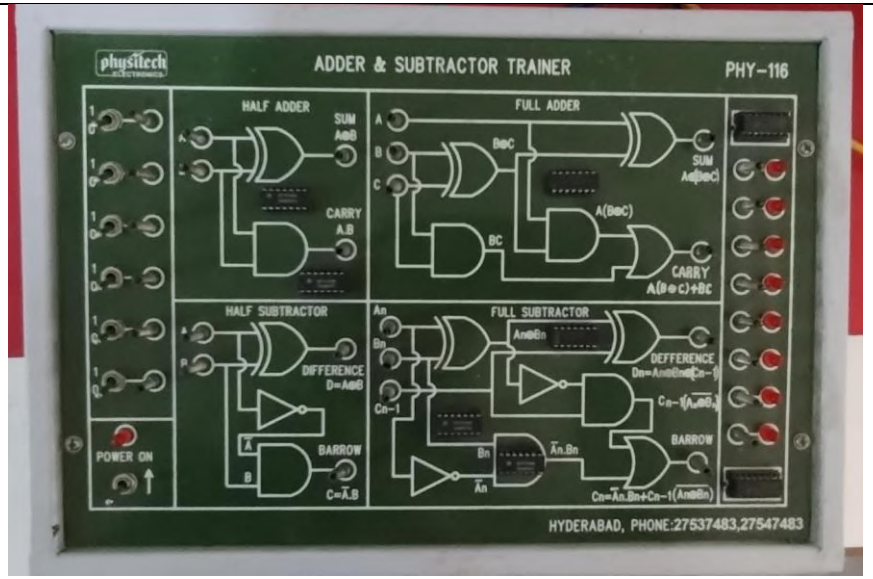
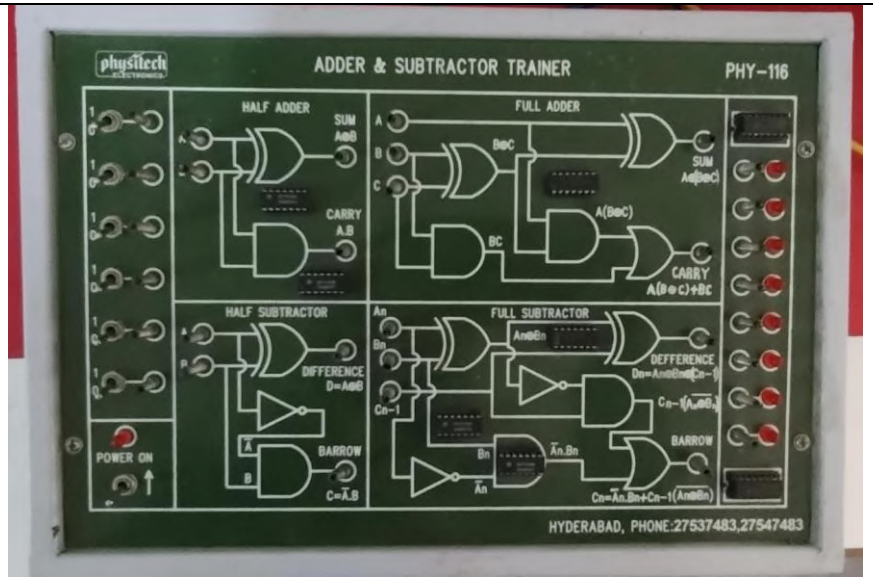
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

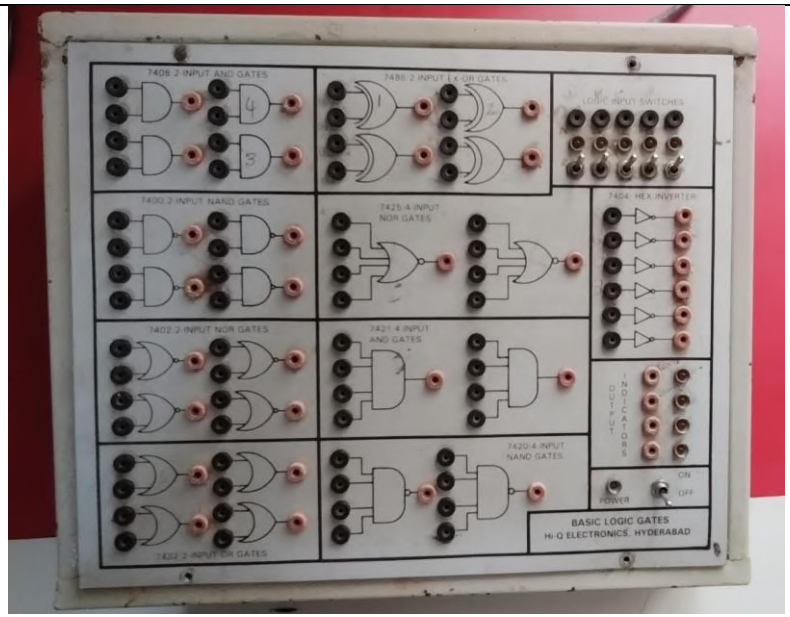
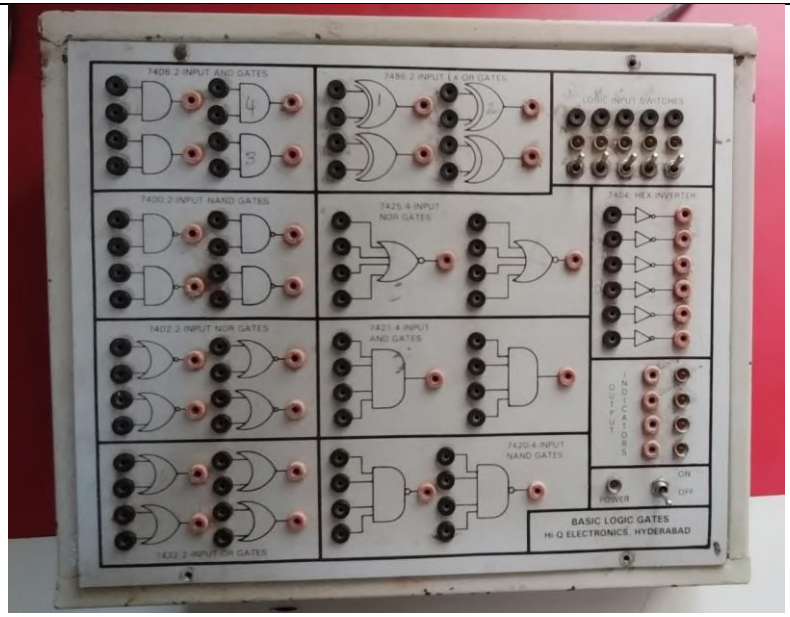
B. Tech II Year II Semester – R20

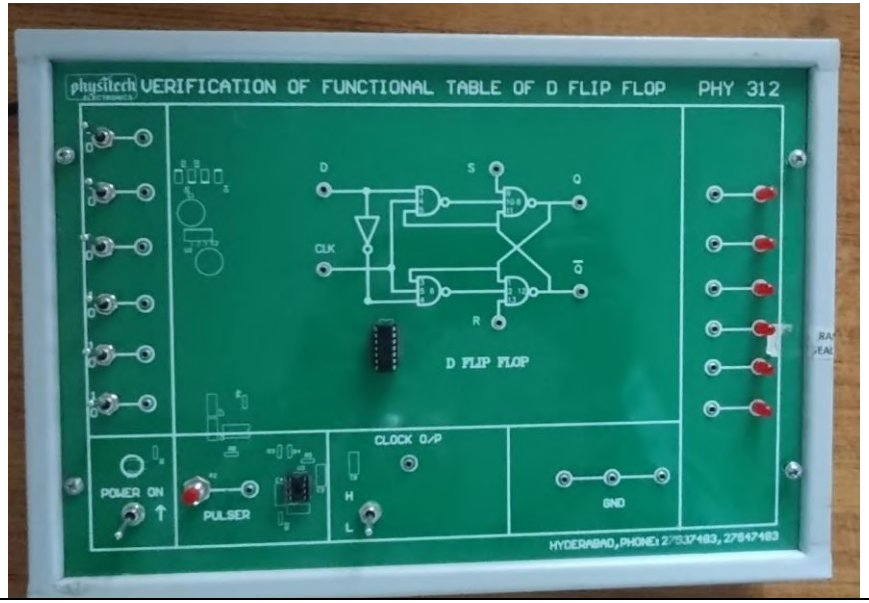
DIGITAL ELECTRONICS LABORATORY – 20EEE205

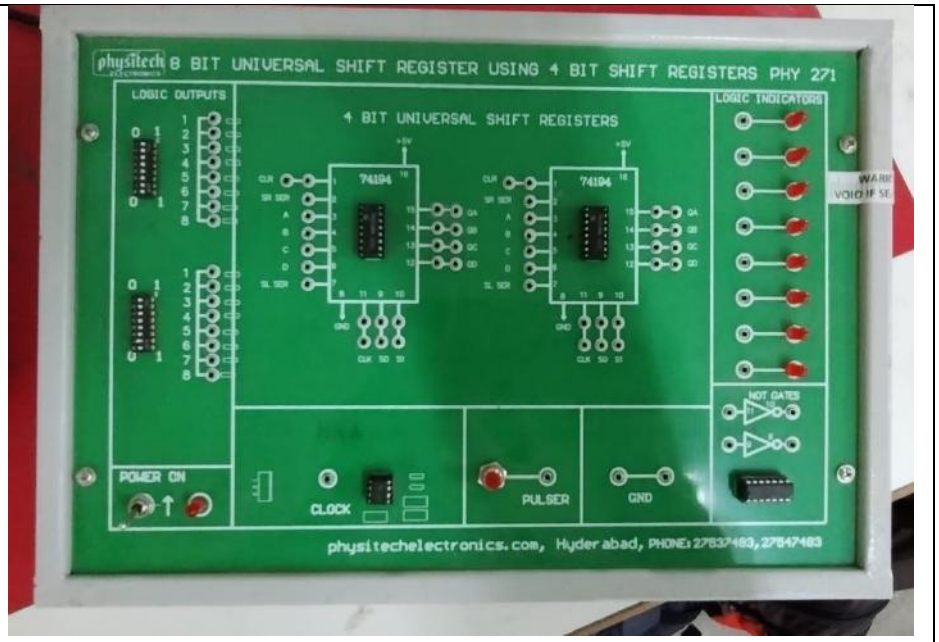
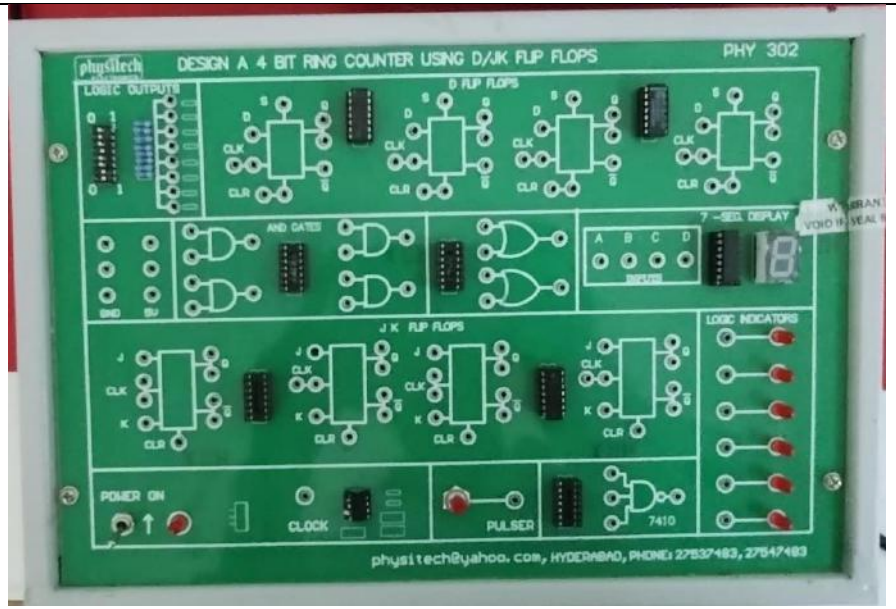
LIST OF EXPERIMENTS

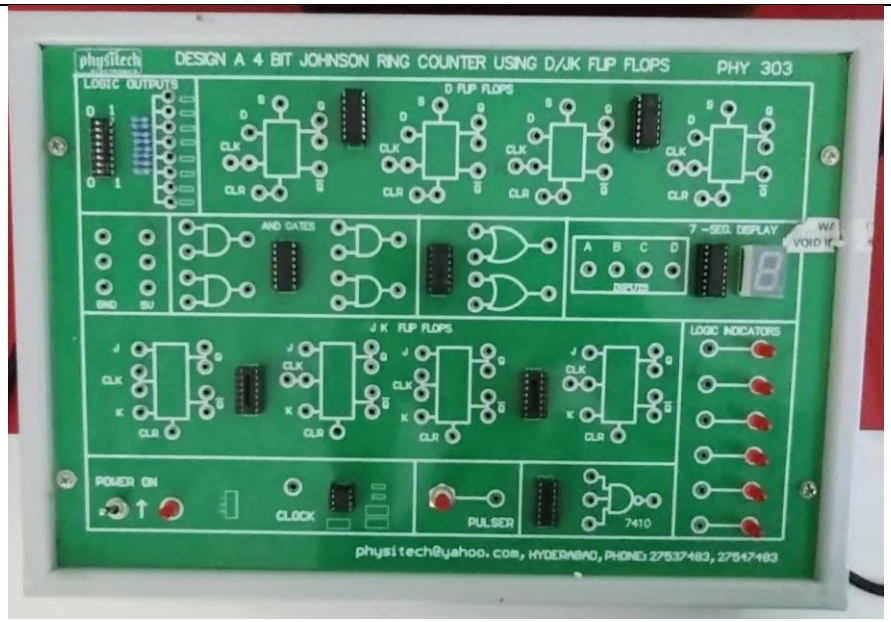
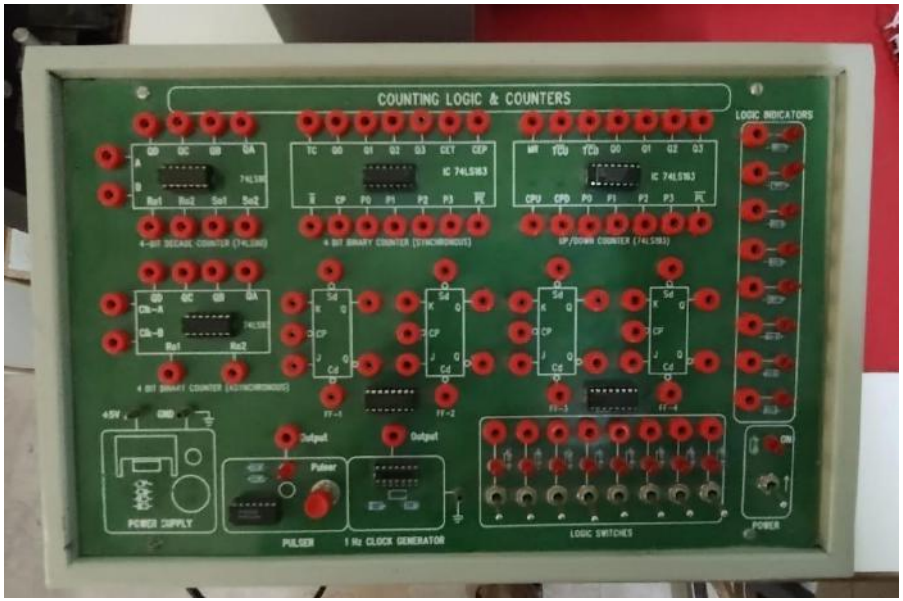
SI NO	NAME OF THE EXPERIMENTS	Equipment details	Image
1	(a) Study of logic gates and verify their truth tables, (b) Implementation of boolean functions	Basic and universal logic gates kit 1. AND gate 2. OR gate 3. NOT gate 4. NAND gate 5. NOR gate 6. EX-OR gate	

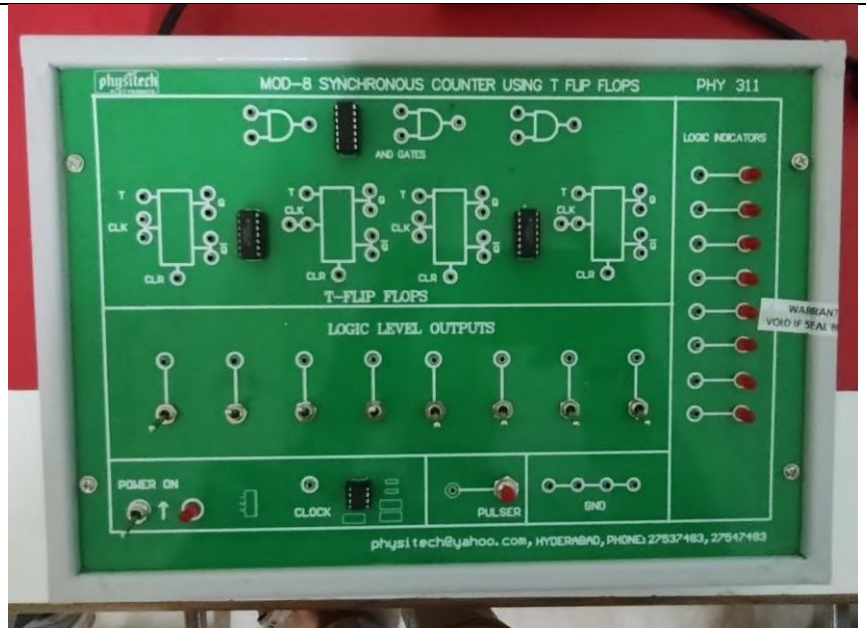
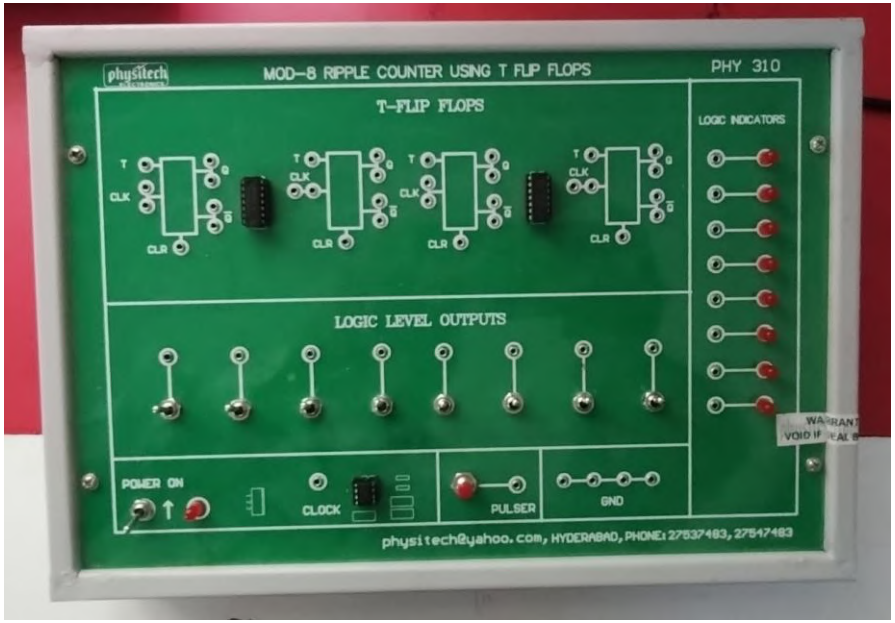
2	Design and construct half adder, full adder using logic gates and verify the truth table.	Adder and subtractor trainer kit 1. Half adder 2. Full adder 3. Half subtractor 4. Full subtractor	
3	Design and construct half subtractor and full subtractor circuits using logic gates	Adder and subtractor trainer kit 1. Half adder 2. Full adder 3. Half subtractor 4. Full subtractor	

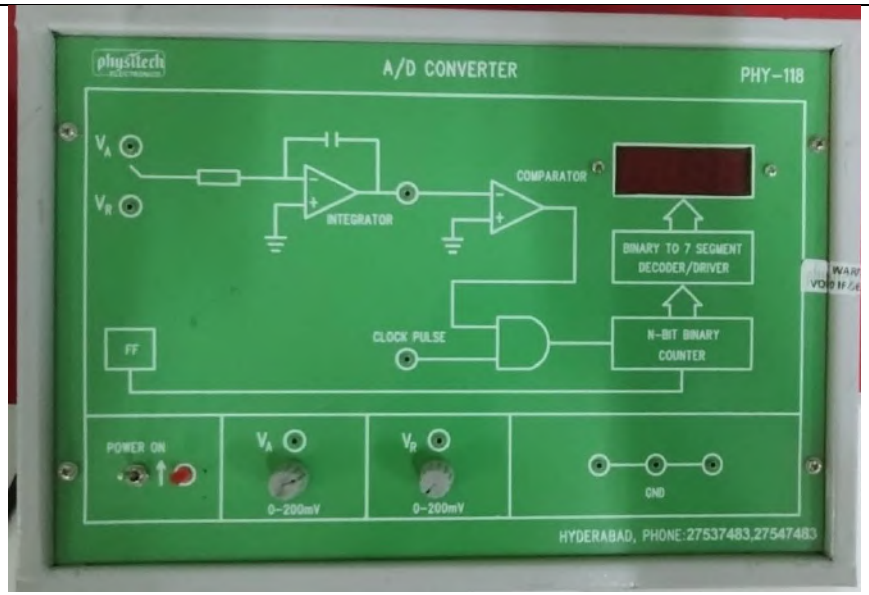
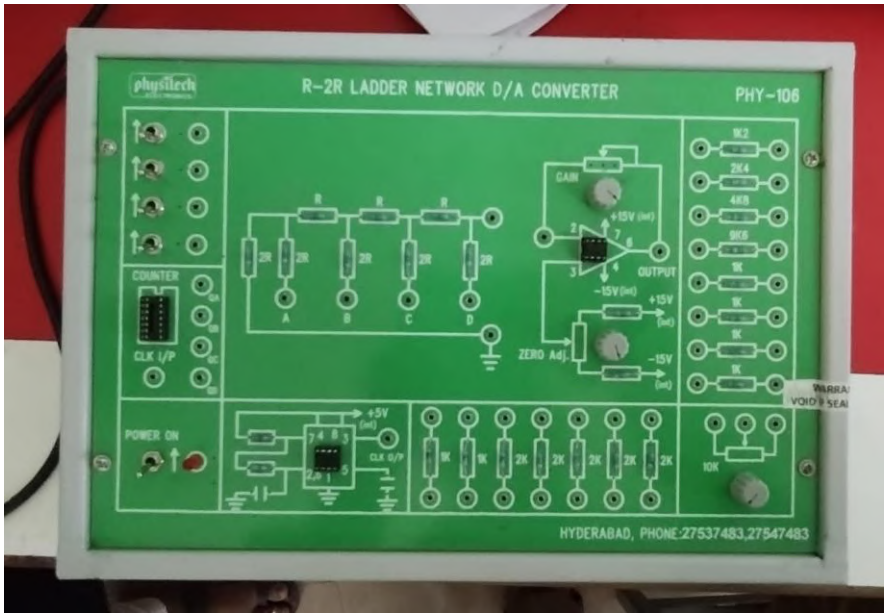
4	Design and implement BCD TO EXCESS-3 CONVERTER and verify the truth table	Basic and universal logic gates kit 1. AND gate 2. OR gate 3. NOT gate 4. NAND gate 5. NOR gate 6. EX-OR gate	
5	Design & implement 4-bit Binary to gray code converter/ 4-bit Gray to Binary code converter and verify the truth table.	Basic and universal logic gates kit 1. AND gate 2. OR gate 3. NOT gate 4. NAND gate 5. NOR gate 6. EX-OR gate	

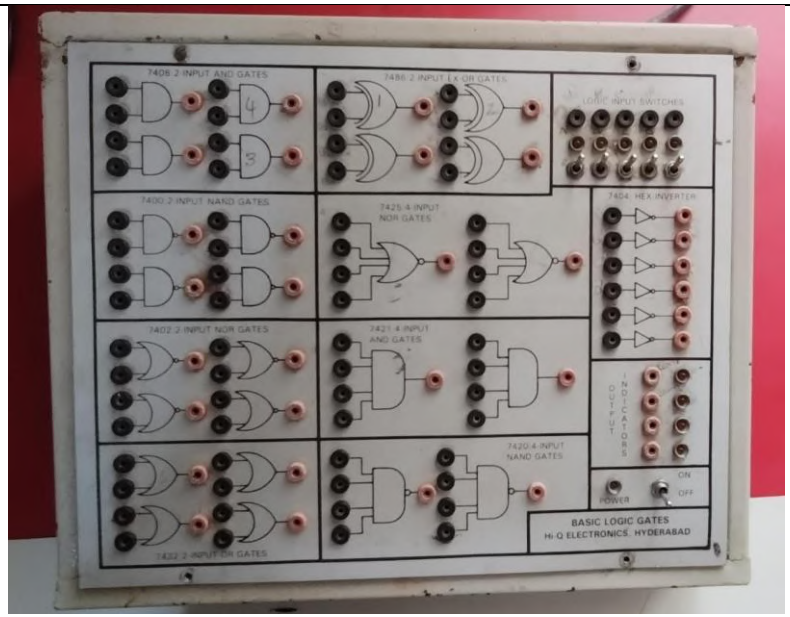
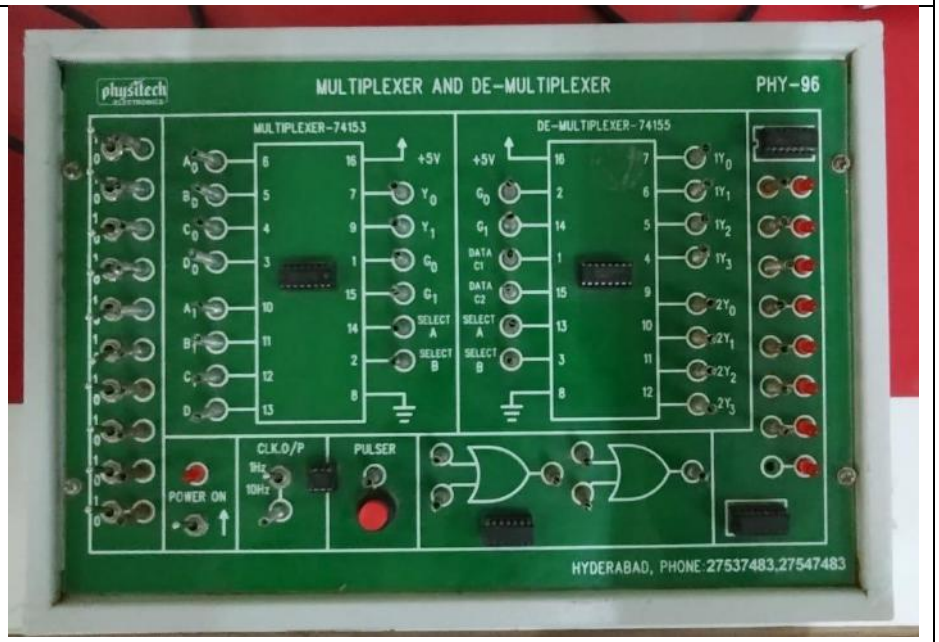
6	Truth Table verification of different flip flops	Flip flops kit 1. JK Flip Flop 2. SR Flip Flop	
		Functional Verification of D Flip Flop	

7	Realize and study of Shift Register. i)SISO (Serial in Serial out) ii) SIPO (Serial in Parallel out) iii) PIPO (Parallel in Parallel out) iv) PISO (Parallel in Serial out)	8-bit universal shift register using 4-bit shift register kit 4- bit 1. SISO shift register 2. SIPO shift register 3. PISO shift register 4. PIPO shift register	
8	Realize (a) Ring Counter and Johnson counter, (b) 4-bit binary up/down counter	4-bit Ring Counter using D/JK flipflops kit	

		4-bit Jhonson Counter using D/JK flipflops kit	
		4-bit binary Up/Down counter by using 74193 IC	

9	Design and test 3-bit binary asynchronous and synchronous counters.	Mod- 8 synchronous counter using T flip flops kit Mod- 8 Asynchronous counter using T flip flops kit	 

10	Verification of Analog to Digital Converter and Digital to Analog converter.	1. Analog to Digital converter kit 2. Digital Multimeter 1. R-2R Ladder network Digital to Analog converter 2. Digital Multimeter	 

11	Realisation of logic gates/logic functions using universal gates.	Basic and universal logic gates 1. AND gate 2. OR gate 3. NOT gate **4. NAND gate** **5. NOR gate** 6. EX-OR gate	
12	Realisation MUX, DEMUX, Encoders, Decoders.	Multiplexer and Demultiplexer kit 1. Dual 4×1 Multiplexer using 74153 IC 2. Dual 1×4 Demultiplexer using 74155 IC	

		Study of Encoders and Decoders kit 1. BCD to Decimal Encoder using 74147 IC 2. Decimal to BCD Decoder 7442 IC