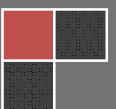




Digital Electronics Laboratory

B.Tech. (Electronics & Communication)

Department of Electronics and Communication
C. G. Patel Institute of Technology, Bardoli.
Uka Tarsadia University



Digital Electronics Laboratory

Objective of Laboratory:

To have hands on training on different digital circuit analysis and design.

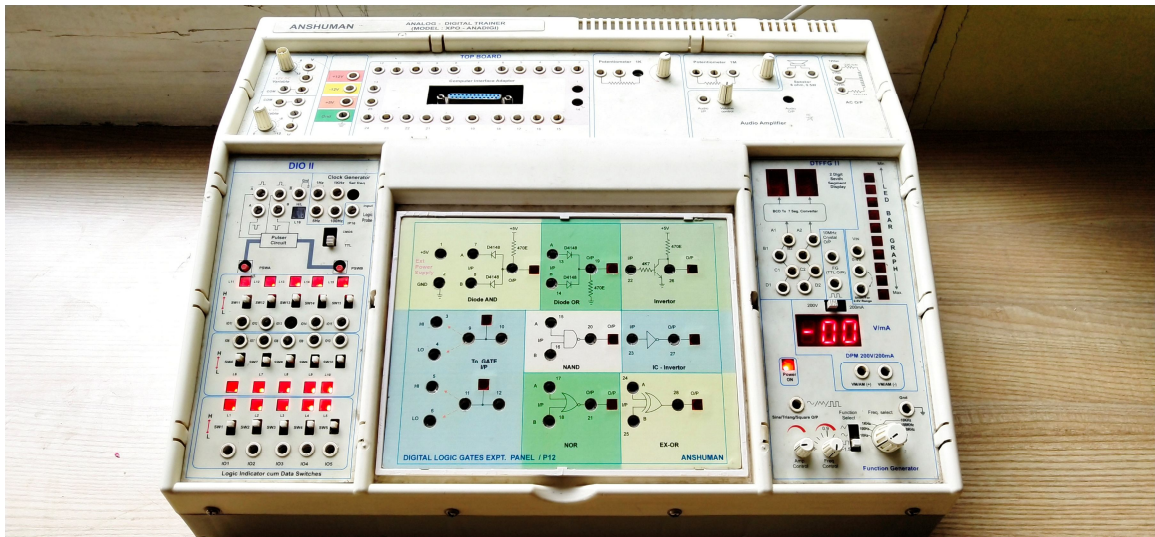
Student learning outcomes / objectives:

To have practical exposure to the basic device and kits used to analysis of digital circuit.

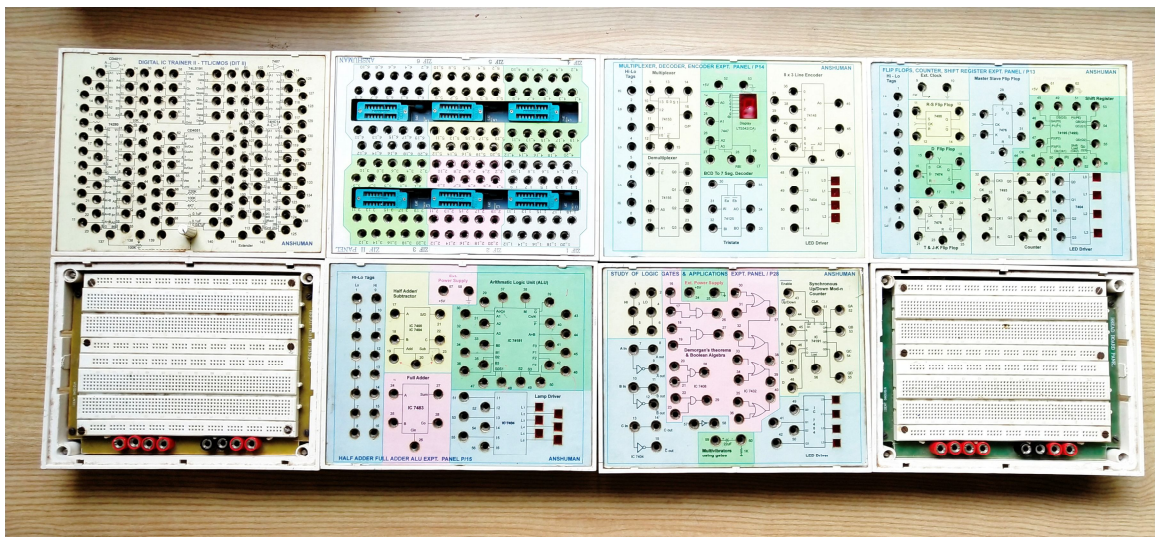
Practical List

| Sr. No. | Title | Hours |
|---------|--|-------|
| 1 | To study and verify truth tables of all logic gates. | 2 |
| 2 | To design and implement all gates using NAND & NOR universal gates. | 2 |
| 3 | To design and implement half adder, half subtractor and both with a select input line. | 2 |
| 4 | To design and implement full adder, full subtractor and both with a select input line. | 2 |
| 5 | To design and implement parity generator and checker circuits. | 2 |
| 6 | To study & verify the code conversion circuits. 1. Binary to Gray code. 2. Gray to Binary code. | 2 |
| 7 | To study the following circuit and verify their truth table: 1. 4 To 1 Line Multiplexer. 2. 1 To 4 Line De-Multiplexer. | 2 |
| 8 | To study the following circuit and verify their truth table: 1. 3×8 Decoder 2. 8×3 Encoder | 2 |
| 9 | To study the following circuit and verify their truth table: 1. R-S flip flop 3. D flip flop 2. J-K flip flop 4. T flip flop | 2 |
| 10 | To study and implement shift registers using D flip-flop. | 2 |
| 11 | To study and implement Up-Down synchronous counter. | 2 |
| 12 | To study and implement Johnson counter. | 2 |

Laboratory Equipment



Analog and Digital Trainer Board



Different Practical's Boards



Digital Trainer Kit

Components Available in Laboratory

| Sr. No. | Components |
|---------|------------------------------|
| 1 | Analog Digital Trainer Board |
| 2 | Digital Trainer Kit |
| 3 | Different practical's Board |
| 4 | Bread Board |
| 5 | Digital IC Tester |
| 6 | Digital ICs |