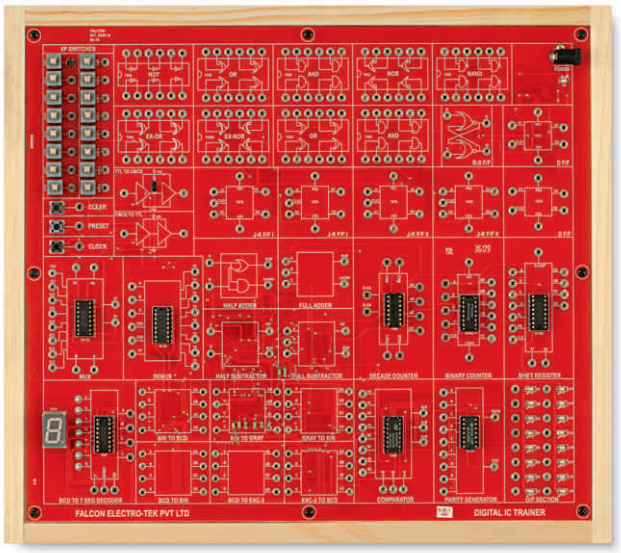
DIT-01
DIGITAL IC TRAINER



FEATURES

- Built in Regulated Power Supply.
- Covers Basic Logic Gates, Universal Gates, Flip-Flops, Counters, Registers, Multiplexer & De-Multiplexer, and Seven Segment Display Driver, Parity Generator / Checker and Code Converters.
- Easy interconnections between circuits
- On-board resources such as Logic Switches for providing inputs to Digital ICs and LED Indicators to check the outputs from the Digital ICs.
- Descriptive experimental manual and an interactive e-manual.
- 20-mm Zif socket.

SPECIFICATIONS

- Basic Logic Gate IC's
- NOT (IC-7404), OR (IC-7432), AND (IC-7408), NOR (IC-7402), NAND (IC-7400), EX-0R (IC-7486).
- NAND and NOR gates as Universal Logic Gates
- De-Morgan's theorem I and II
- Boolean Equation
- Half Adder, Full Adder, Half Subtractor, Full Subtractor
- Basic Flip-Flops RS (using NOR), JK (IC-7476), D (IC-7474), MS-JK (IC-7476), D (IC-7474) and T (using JK)
- Ripple Counter (IC-7490)
- Synchronous Binary Counter (IC-74191)
- 4-Bits Ring Counter using IC-7476
- Decade / BCD Counter using IC-7490
- Universal Shift Register IC-74194
- 9-Bits parity Generator / Checker (IC-74280)
- Multiplexer (IC-74153) and De-Multiplexer (IC-74138)
- BCD to Seven Segment Decoder (IC-7447)
- 4-Bits Comparator (IC-7485)
- Binary to Gray, Gray to Binary, Binary to BCD, BCD to Binary, BCD to Excess-3, Excess 3 to BCD
- Switches to provide Logic 0 & 1 inputs with indication
- LEDs to observe the Output Logic States
- Manual clock to observe the Counter operation

EXPERIMENTS

- To verify the truth table and function of basic Logic Gates
- To verify NAND and NOR gates as Universal Logic Gates
- To verify the De-Morgan's Theorem I and II
- To verify the Boolean Equation
- To study and verify working and truth table of Half Adder, Full Adder, Half Subtractor and Full Subtractor
- Design of Half Adder & Half Subtractor using Multiplexer & De-Multiplexer
- To study the Behavior of Basic Flip-Flops (RS, JK, MSJK, D & T)
- To study and design Ripple/ Asynchronous Counter using JK Flip-Flop
- To study the Synchronous Binary Counter using IC-74191
- To design 4-Bits Ring Counter using JK Flip-Flop
- To verify Decade / BCD Counter using IC-7490
- To study Universal Shift Register using IC-74194
- To study 8-Bits Parity Generator / Checker using IN-74280
- To study Multiplexer IC-74153 and De-Multiplexer IC-74138
- To study BCD to Seven Segment Decoder IC-7447
- To study 4- Bits Comparator IC-7485
- To study Binary to Gray, Gray to Binary, Binary to BCD, BCD to Binary, BCD to Excess-3, and Excess-3 to BCD Converters
- To Study 4-Bits Binary Adder
- Study of TTL clock Generation using NAND gate
- Study of Debounce ckt. using NAND gate