Order Code - 38691
Logic Gate Tutor

Order Code-38691 The Logic Gates Tutor is intended for elementary as well as advance training of digital electronics. The trainer Cover regular digital circuits by solder less inter connections through use of 2 mm brass terminations and patch cords. Various clock generators, logic level input / output indicators and DC regulated power supply are in built.

EXPERIMENT'S:

Experiment 1: Study of basic gates and verification of their truth tables:

1.1	NOT	1.2	OR	1.3	AND	1.4	NOR
1.5	NAND	1.6	EX-OR	1.7	EX -NOR		

Experiment 2: Study and verifications of the law of Boolean algebra and De-Morgan's Theorems.

2.1.1 AND
2.1.2 OR
2.1.3 COMPLEMENT OR NOT

THEOREMS

2.2.1 (A = A + 0)
2.2.2 (1 = A + 1)
2.2.3 (A = A + A)
2.2.4 (1 = A + A')
2.2.5 (A.1 = A)
2.2.6 (A.0 = 0)
2.2.7 (A.A = A)
2.2.8 (A.A' = 0)
2.2.9 (a & b) De Morgan's Theorem-ILHS & RHS (A+ B)' = A'. B
2.2.10 (a & b) De Morgan's Theorem -II LHS & RHS (A . B)' = A' + B'
2.2.11 A + A B = A
2.2.12 A + A'B = A + B
2.2.13 (AB + AB') = A
2.2.14 (a & b) (AB + A'C) = (A + C) (A' + B)
2.2.15 AB + A'C + BC = AB + A'C
2.2.16 A (A + B) = A
2.2.17 (a & b) A (A' + B) = AB
2.2.18 (A + B) (A+ B') + A
2.2.19 (A + B) (A' + C) = AC + A'B
2.2.20 (a & b) (A + B) (A'+ C) (B + C) = (A + B) (A'+C)

Experiment 3: Study of important TTL terminologies. Verification of important TTL Circuit parameters

3.1.1 Low State Input Current I_{IL}
3.1.2 High State Input Current I_{IH}
3.1.3 Low State Output Voltage V_{OL}
3.1.4 High State Output Voltage V_{OH}
3.2 TTL Transfer Characteristics

Experiment 4: Construction and verification of various types of combinational circuits:

4.1	Half Adder	4.2	Full Adder
4.3	Half Subtractor	4.4	Full subtractor
4.5	Even / Odd parity checker	4.6	2 to 1 Line Multiplexer (Encoder)
4.7	2 to 4 Demultiplexer (Decoder)	4.8	Binary to Gray Converter
4.9	Gray to Binary Converter	4.10	2 Bit comparator

FEATURE:

01.	DC Power Supply	:	±5 V at 500 mA (IC based regulated output)
02.	Logic Level Inputs	:	Eight independent logic level inputs to select High / Low TTL levels
03.	Logic Level Indicators	:	Eight independent logic level indicators for High / Low status
04.	Logic Gate with Mimic Diagram	:	30 No.
4.1.	2-input NAND gates	:	8 No.
4.2.	Inverters (NOT gates)	:	6 No.
4.3.	2-input NOR gates	:	4 No.
4.4.	2-input AND gates	:	4 No.
4.5.	2-input EX-OR gates	:	4 No.
4.6.	2-input OR gates	:	4 No.
05	Power ON	:	Power ON Switch with indicator for mains on indication and fuse for protection
06	Patch Cords	:	Patch cords stackable 2mm plug both side Red & Black
07.	Power Requirement	:	230V ±10% single phase AC
08.	Instruction manual	:	One detailed instruction manual with well thought out experiments covering the above topics

Note: Specifications are subject to change.

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