LAB 3: Design and verification of simple Logic circuit using Primitive logic gates.

Components Required:

- IC 7404
- IC 7408
- IC 7432

- Bread board
- Light Emitting Diode (LED)

- Resistor(1 KΩ)

PROBLEM

Synthesize the Logic to check if the traffic light is working properly or not using logic gates. Use the table given below to synthesize the circuit.

R	Y	G	Condition (F)
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0

F=1 implies stop-light is working correctly
F=0 implies stop-light is busted.

Students are requested to follow the design procedure as outlined.

- Simplify the given truth-table using Boolean Algebra.
- Draw the circuit Diagram using appropriate logic gates.
- Synthesize the circuit in Bread-Board.
- Verify the truth table.

Note: **Use _the primitive gates i.e. AND, OR and NOT to implement the logic_**)

Expression for the given Design Problem:

Draw the circuit Diagram using appropriate logic gates in space provided.