

PLC Lab Test

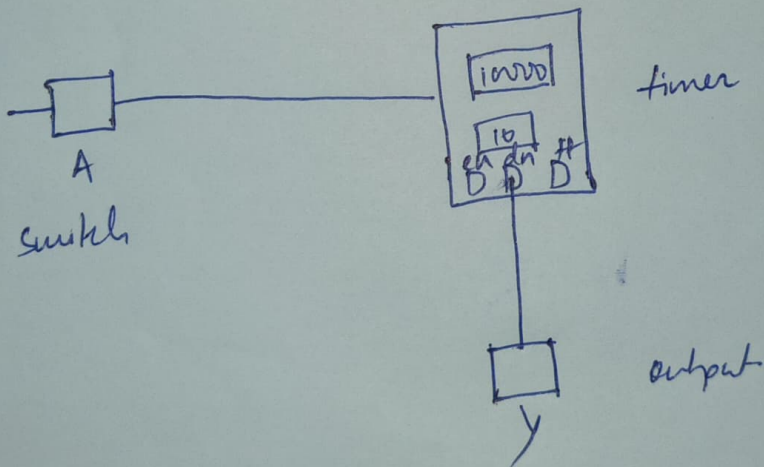
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- ①
- (i) Maintained push button remains in a position until pressed again.
 - (ii) Momentary push button function means when pressed down, it immediately returns to its natural position.

② On-delay timers are used in blower motor to delay the operation for specific period of time after a gas, electric, or oil heaters has been turned on. it can be used at many places whenever there is a need of delay on start.

③



Q.4) T-ON \rightarrow timer gives delay at the start i.e. it provides a delay at the start of the input.
after starting the switch it will wait for the provided amount of time then it is sent the output.

T-off \rightarrow timer gives delay in output of the end. i.e. it will delay the state of the output for the specified amount of time. even after switching off the button the output will be active for specified amount of time.

Q.5): for the up counter the output is taken at the non-inverting output port of the flip flop. whereas for down counter the output is taken at the inverting output port of the flip flop.

Q.6) Relays are electric switches that uses electromagnetism to convert small electrical stimuli into large currents.

Relays connect or disconnect the circuit automatically provided by a digital logic as an input to the relay, which internally does an electromagnetic induction between the connection and disconnection.

7.) Steps for ladder programming:

- i) Analyze and get idea of control Application.
- ii) List All the conditions and get the Design using flow chart
- iii) Open and configure the PLC programming software.
- iv) Add required Rungs and Address them.
- v) Check the Errors and Simulate it.
- vi) Download the program to PLC CPU memory.

8) XIC, XIO, and OTE are the three main ~~type~~ Relay type instructions in PLC programming.

9) **NAND**

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

XOR

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

10) the motor is connected to the full supply voltage through a starter.

