

CUKUROVA UNIVERSITY

ELECTRICAL-ELECTRONICS ENGINEERING

EEE 419 PROGRAMMABLE LOGIC CONTROLLERS LABORATORY

EXPERIMENT 1

LOGIC STACK OPERATIONS

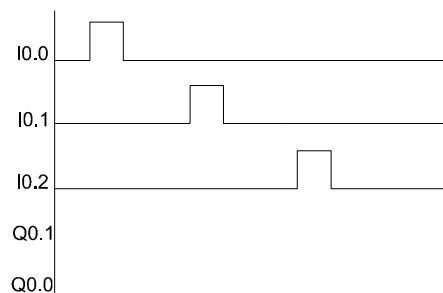
Object: In this experiment basic logic stack operations: LD(load), LDN(load not), A(and), AN(and not), O(or), ON(or not), S(set), R(reset), ALD(and block), OLD(or block), MEND(end of program), and stack concept will be introduced.

PRELIMINARY WORK

P1. Write PLC programs for each logic function given below for both S7-200 and FX5U. The program must be in the form of both ladder diagram and statement list.

- 1) $K1 = S1 * S2$
- 2) $K2 = S1 + S2$
- 3) $K3 = S1' * (S2 + K3) * S3'$
- 4) $K4 = X1 * X3 + X1 * X4 + X2 * X3 + X2 * X4$
- 5) $Q0.0 = (I0.0)[(I0.1)[(I0.2) + (I0.3) * (I0.4)'] + (Q0.0) * (I0.5)'[(I0.3) * (I0.2) + (I0.4)']]$

P.2 For the given PLC program draw the waveform of the Q0.0 and Q0.1 according to inputs I0.0 and I0.1.



P.3 For the given program segment i) determine the stack contents and positions after each command is executed. ii) determine the logic function Q0.0.

EXPERIMENTAL PROCEDURE

E.1 Verify the programs which are written in P.1 using S7-200 micro and FX5U PLC.

E.2 Verify the program which is written in P.2 using S7-200 micro and FX5U PLC.

E.3 Verify the programs which is written in P.3 using S7-200 micro and FX5U PLC.