

**The University of Jordan
School of Engineering
Electrical Engineering Department**

**EE 449
Instrumentation and Control Lab**

**EXPERIMENT 5 REPORT
INTRODUCTION TO PLC AND LADDER LOGIC**

Section # _____ Group # _____

Student Name

ID

- 1.
- 2.
- 3.
- 4.

EXPERIMENT 5

INTRODUCTION TO PLC AND LADDER LOGIC

PROCEDURE A

1. Program the PLC with a ladder diagram that performs all the following logical functions:

- Q0.1 = NOT I0.1
- Q0.2 = I0.2 (OR) I0.3
- Q0.3 = I0.4 (AND) I0.5
- Q0.4 = I0.6 (NAND) I0.7
- Q0.5 = I1.0 (NOR) I1.1
- Q0.6 = I1.2 (XOR) I1.3

Write down the results:

I0.1	Q0.1
0	
1	

I0.2	I0.3	Q0.2
0	0	
0	1	
1	0	
1	1	

I0.4	I0.5	Q0.3
0	0	
0	1	
1	0	
1	1	

I0.6	I0.7	Q0.4
0	0	
0	1	
1	0	
1	1	

I1.0	I1.1	Q0.5
0	0	
0	1	
1	0	
1	1	

I1.2	I1.3	Q0.6
0	0	
0	1	
1	0	
1	1	

2. Now build a new ladder diagram for turning the output Q0.0 ON when you activate the start pushbutton I0.0, and stop when you activate the pushbutton I0.1, recall figure 20.

Write down the results (keep the sequence):

I0.0	I0.1	Q0.0
0	0	
0	1	
1	0	
1	1	

3. Program the PLC with the ladder diagram in figure (28).

Write down the results (keep the sequence):

I0.0	I0.1	Q0.0	Q0.1
0	0		
0	1		
1	0		
1	1		

4. Draw the same ladder in step 3 again but add a new pushbutton (STOPM) that will stop the motor whenever the user activates it. Program the PLC with the new ladder diagram, after adding STOPM.

Write down the results (keep the sequence):

I0.3 (stop)	I0.0	I0.1	Q0.0	Q0.1
0	0	0		
0	0	1		
0	1	0		
0	1	1		
1	0	0		
1	0	1		
1	1	0		
1	1	1		

5. Now program the PLC to do the following sequence: When you press the pushbutton (I0.0), (Q0.0) activated immediately, for 5 seconds, then it turns OFF. After it turns OFF, wait 10 seconds, and then turn Q0.1 ON.

Write down the results (keep the sequence):

I0.0	Q0.0 Immediately	Q0.0 After 5 sec	Q0.1 Immediately	Q0.1 After 10 sec
0				
1				
0				

