Generate PLC programs and generate the truth table to verify the results. Store the programs in a USB 2.0 flash drive and simulate them on the NUM PLC.

1) 

2) Write a short program to perform the following operation according to two inputs I0 and I1.

   operation: \( 79 \otimes 85 \) (Send output to AN2)

   \[
   \begin{array}{c|c|c|c|c|c|c|c}
   \hline
   \text{I0 (E1)} & 0 & 0 & 1 & 1 \\
   \text{I1 (E2)} & 0 & 1 & 0 & 1 \\
   \hline
   \otimes & \text{and} & \text{or} & \text{nand} & \text{xor} \\
   \hline
   \end{array}
   \]

3) 


4) Operation: Motor control problem

Motor = (Motor + start) AND stop AND clamp1 AND clamp2

Use the following variables:

Motor: A0  
Start: E1  
Stop: E2  
Clamp1: E3  
Clamp2: E4

Procedures for simulation on NUM machine:

1 - Open the ME576 project template

Start Flexium Tools software in NUM machine. Under “Getting started”, click on “Open a project from disk”. Select “ME576PLC.project”. The template has been designed for pre-mapping of the variables to the correct addresses of the PLC numpad.

Click on Finish to accept all the default NUM project configurations
2 – Start programming in MainPRG under PLC Logic → Application

Refers to the CodeSys Manual for instructions on how to use the built in function.
3 – Convert the program from instruction list to ladder diagram to verify your code.
4 – Simulate the PLC program using NUM numpad buttons: