

The Exam Data

Download the program available on this link [[Download Code](#)] and add it to a new project in MPLAB. Make sure that you **select 16F877A** microcontroller as the device for your project. Assume that the microcontroller is operating at 1 MHz.

1) There is one syntax error in this program. What is the line number of this error? Write the line number in decimal and correct this error before moving to the next questions.

D'

2) What is the address of the instruction located at the LA label? Write the value in 4-digit hexadecimal representation and use capital letters if needed (example: 01BD).

0x

3) What is the machine code of the instruction located at the LG label? Write the value in 4-digit hexadecimal representation and use capital letters if needed (example: 01BD).

0x

4) When the program is executed, how many cycles are required to reach the instruction located at label LT? Write it in decimal not in hexadecimal.

D'

5) What is the value of register X2 when the program returns from the S3 subroutine? Write your answer in decimal.

D'

6) When the program invokes the S1 subroutine, what is the return address that is stored to the stack? Write the value in 4-digit hexadecimal representation and use capital letters if needed (example: 01BD).

0x