National University of Computer and Emerging Sciences



Laboratory Manual

for

Computer Organization and Assembly Language Lab

(EL 229)

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**Question 1**

Write the equivalent assembly program for the following decision structure.

IF (AX < BX) and (BX < CX)

THEN put 0 in DX

ELSE

put 1 in DX

END IF

**Question 2**

Write a sequence of instructions to put the sum of 1 + 4 + 7 + 10 + 13 + … + X in AX. Your program has to determine the value of X given that ( 1 + 4 + 7 + 10 + 13 + … + X) < 65535. Once X has been determined move X into DX before terminating your program.

**Question 3**

Write a program to calculate the factorial of a number where factorial is defined as:

FACTORIAL(X) = X\*(X-1)\*(X-2)\*...\*1

FACTORIAL(0) = 1

The following algorithm may be used to carry out multiplication of two non-negative numbers by repeated addition:

PRODUCT = 0

FOR I= 1 TO B DO

PRODUCT = PRODUCT + A

END FOR

**Question 4**

Write the sub-routine to calculate factorial. The sub-routine should take as parameter the number

to calculate the factorial and returns factorial in AX register.