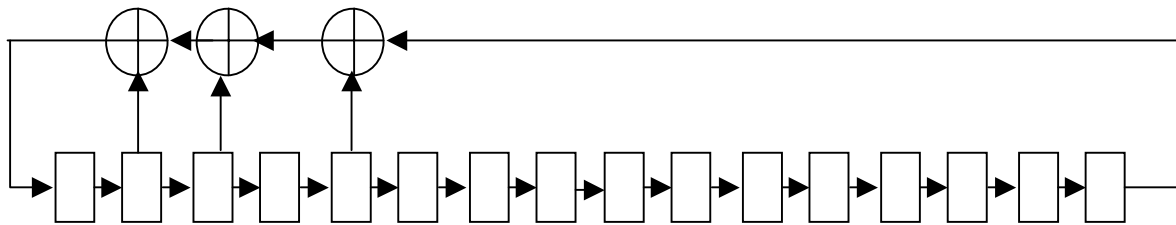## COE 205, Term 012

Computer Organization & Assembly Programming
Quiz# 4

(Take Home)

Due date: Tuesday, April 30

You are required to write an 8086 assembly program to implmenet a pseudo random generator using Liner Feedback Shift Register (LFSR). A 16-bit LFSR is shown below:

The 16-bit LFSR shown above is guaranteed to generate a random sequence in the range from 1 to 2^{16}-1. The register has to be initialized first by a seed, which can be any number other than 0. In your implementation use a seed of 1.

(i)   Write a subroutine that displays the content of a 16-bit register in decimal. The content of the register should be passed on the stack.
(ii)   Display in deimal using the subroutine in (i) the first 20 numbers generated by the above shown LFSR.
(iii)   Ask the user to enter a number, and then restrict the random numbers generated to be less than that entered number. As an example, enter the maximum number to be 10 and also display in decimal the first 20 numbers generated by the LFSR.

Make sure that your program is well documented. Provide a hard copy of the program and a soft copy of both the assembly code and the executable stored in a floppy disk.