Assignment # 2(a)

Assembly Language Programming

Sections C & D

**Note: Submit this part of your assignment; 1 code file for each question in a large zip file on Slate till 11:55pm 27th October 2015.**

**No Plagiarism at all! It would result in an undefined behavior.**

**Q1:** Write a subroutine that performs extended multiplication of two *n-*bit arguments passed via stack. The length of the two numbers - also passed as an argument - is arbitrary but equal. At the end of the routine, return the product of the numbers on stack. Do not use any data segment!

**Q2:** Write a subroutine that implements Insertion Sort algorithm on an array of given size passed via stack.

**Q3:** You wrote a program to calculate fibonacci of a number in Assignment 1. Now write a recursive subroutine to do the same. The number *n*  should be passed to the subroutine as an argument via stack. Answer should also be returned via stack.

**Q4:** Write a subroutine switch\_stack meant to change the current stack and will be called as below. The subroutine should destroy no registers.

*push word [new\_stack\_segment]*

*push word [new\_stack\_offset]*

*call switch\_stack*

Note:

* If we move anything to SS, then for next one instruction the interrupts are disabled.
* You are not allowed to use cli.

**Q5:** Write a recursive subroutine for calculating GCD of the two numbers (2 byte) on the stack. Result is returned in ax. Use the Euclidean algorithm for calculating GCD.

Good Luck…!!!