Assignment # 2(b)

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 draws a rhombus on the screen. It is passed three parameters via stack. One is the length of a side and the other two are the x and y coordinates of the top edge.

**Q2:** Replace all occurences of substring *string1* with *string2* in a larger *string3*. Use strings instructions wherever possible. All the strings are given in memory and could be of any given length. For example:

*string3* = “*We know what we are, but know not what we may be.*”

*string1 = “what we”*

*string2 = “who we”*

*new string3 = “We know who we are, but know not who we may be.”*

**Q3:** Hook an interrupt to display the clock in the middle of the screen for a given number of seconds provided via *al* register. Clock format should be HH:MM:SS:DD HH is hours in 24 hour format, MM is minutes, SS is seconds and DD is hundredth of second.

**Q4:** Hook an interrupt that takes an argument in *ah* register the type of the logic function and displays the truth table against it in the middle of the screen in rectangular shape . It should handle at least these functions:

AND, OR, NOT, XOR, XNOR, NAND, NOR

**Q5:** Hook an interrupt that makes an array of 0x80 bytes and treats it as one of 0x400 bits. Then write a subservice that takes one argument; the number of bits in  dx register. It finds that many consecutive zero bits in the array, makes them one, and returns in AX the index of the first bit. Write another subservice that takes two arguments, index of a bit in the array in dx, and the number of bits in bx. It makes that many consecutive bits zero, whatever their previous values are, starting from the index in the first argument.

Good Luck…!!!