EE213 Computer Organization and Assembly Language
Assignment I – Fall 2019
Open Date: Monday 28th October, 2019 (1600HRS)
Due Date: Friday 1st November, 2019 (2300HRS)

IDIV

1. With the help of some practical example prove why sign extension is necessary before signed division (IDIV).

Stack Frames/Recursion

2. Assuming that **array1** is a WORD array containing decimal numbers ranging from -50 to +49

```
array1 WORD 0,-2,1,3,-7,8,-10…
```

Write some recursive code that should sum up all the ODD numbers in the array and stores the resulting value in a variable named result.

3. Implement a recursive procedure to display the following pyramid where each element is twice of its successor, implement till 5 levels, draw out the stack for the first 5 recursive calls and identify each stack frame, also show the value of EIP and ESP, and the most recent element on the stack after each call/invoke:

```
                1
          2     4     8
    16    32    64    128   256 ….
```

String Primitives

4. Implement the following C++ string functions with the help of X86 String Primitive Instructions:
   a. **Substring**
   b. **StringFind**
   c. **StringComparison**
   d. **StringCopy**

Two Dimensional Array:

5. Implement a 2D array of 4 Rows and 6 Columns, and display the Average of each row, column and whole the table. Input eh array elements from user.

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