***In the name of GOD***

Principle Of Programming HW#3

Due date : Wednesday, November, 7, 23:55

Q1 – Write a function to determine whether an expression’s **bracketing**, is valid or not.

Prototype : int is\_valid (char array[ ]);

is\_valid( “(3 + ((5) \* -7))” ) à 0

is\_valid (“(3 (+) ())”) à 0

is\_valid( “ )) ( 9\*8 ) (( ” ) à 0

Q2 – Write program to implement a queue operation(insert, delete and display) using array. Use switch statement to access these function. (if you don’t know what Queue is search it)

Q3 – Write a program to permute first N natural number. (recursively)

Input: 2

Output: 1 2

2 1

Input: 3

Output: 1 2 3

1 3 2

2 1 3

3 1 2

2 3 1

3 2 1

Q4 – Write a function to check string is palindrome using stack.

Prototype : int is\_palindrome (char array[ ]);

is\_palindrome (“hellolleh”) --> non\_zero

is\_palindrome (“abcd”) --> 0

Q5 – Given an array of integers, print a sum triangle from it such that the first level has all array elements. From then, at each level number of elements is one less than the previous level and elements at the level is be the Sum of consecutive two elements in the previous level. (recursively)

Input = {1, 2, 3, 4, 5}

Output = [48]

[20, 28]

[8, 12, 16]

[3, 5, 7, 9]

[1, 2, 3, 4, 5]

· Compress your answers (your .c files) in a zip file named like StudentNO\_HW3.zip

o Eg : 9332222\_HW2.zip

· DO NOT WORRY ABOUT YOUR GRADES AND DO NOT COPY!

The thing we care most about is your hard work and progress. Just try your best and leave the rest to us. ^\_^

REGARDS