Question 01

a) Write a pseudo code to create a stack.
b) Write a C code to implement a stack mainly highlighting the basic stack operations.
c) Create two additional stacks.
d) Write a function which will copy elements in the stack to one of the additional stack such that the order of the elements is not changed.
e) Determine the validity of your program using some examples.
f) Discuss expansion possibilities and limitation of your design.

Question 02

Write a program to reverse the numbers inserted in a stack using basic stack operations.

Question 03

Write a program to convert given infix expression into postfix or prefix and then evaluate these examples,

a) What is the suitable data structure?
b) 3 * 2 + 4 * (A + B)
c) (A + B) * (C + D)
d) (A + B) * C - (D - E) * (F + G)
e) (A + B) * C - (D - E) * (F + G)

Question 04

A complier need to check the matching of delimiters in a program. The used delimiters are

[,], {, }, (,), /*, */.

a) Identify and justify the suitable data structure to be used.
b) Think about the pseudo code to achieve this task.
c) Convert that pseudo code to a C program
d) Determine the validity of the program using following statements.
    a. S = [(a+b)+c+d)*e-f;
    b. ((a+(b+c)+[p*q]);
e) Discuss expansion possibilities and limitation of your design.

Question 05

a) What is the suitable data structure to identify whether the given string is a palindrome or not.
b) Justify your answer.
c) Think about the pseudo code to do it.
d) Implement it using C.

e) Determine the validity of your program using the some examples.
f) Discuss expansion possibilities and limitation of your design.

Question 06

Write a C program to convert decimal number to binary format using an appropriate data structure.

Submission

You should upload your answers as a single zip file to the LMS on or before specified date - 11.55pm. Make sure to rename your file as **index_no.zip**.

Deadlines:

Group 01: 01/03/2018 – 11.55 p.m

Group 02: 05/03/2018 – 11.55 p.m