M. Sc. (Mathematics with Applications in Computer Science) M. Sc. (MACS)

Term-End Examination

December, 2018

PROGRAMMING AND DATA STRUCTURE

Time : 2 Hours

Maximum Marks : 50

Note : (i)   There are *two* questions in this paper, totalling to 40 marks.

(ii)   Answer both of them.

(iii)   Remaining 10 marks are for viva-voce.

1. Write a C program to check whether an input matrix is upper triangular or not. 15

2. Write a C program which implements a BST of integers. The program should include a function for each of the following tasks : 25

   (i) Addition of a node to the BST.

   (ii) Traversal of BST in inorder and postorder.

   Use the above functions to do the following :

   (i) Insert elements in the following order :

$$11, 6, 12, 8, 5, 10, 13$$

   (ii) Perform inorder and postorder traversal and display the value of the nodes traversed.