INDIAN STATISTICAL INSTITUTE BANGALORE CENTRE
Documentation Research and Training Centre

M.S.(Library and Information Science)2015-16
First Year, Semester II, Mid-Sem

Paper 10: Data Structures and Computer Programming

Date: Feb 26, 2016

Each question carries 5 marks. $(5 \times 6 = 30)$.

1. Draw the binary search tree that results from inserting the following values into an initially empty binary search tree in following order:

$$28, 14, 10, 5, 15, 22, 19, 25, 50, 36, 31, 43, 69, 66, 97$$

   Find the preorder traversal, postorder traversal and inorder traversal of the resulting binary search tree.

2. Sort following unsorted array of integers using selection sort. Write output after each pass or iteration.

$$3, 4, 1, 7, 9, 6$$

3. Convert following infix notation to prefix and postfix notations.

$$\frac{(6 + 34)}{5} - 2 * 3$$

4. Draw a flowchart for finding factorial of a given number.

5. Write an algorithm to Find GCD(Greatest Common Divisor) of given two numbers using recursion and iteration.

6. Write an algorithm to reverse a linked list, and return the head of the reversed list.