**Assignment 3**

Q1. Define Tree. Explain the tree traversals with algorithms and examples

Q2. Construct an expression tree for the expression (a + b \* c) +((d \* e + 1) \* g). Give the outputs when you apply preorder, inorder, and postorder traversals.

Q3. Explain the binary search tree ADT in detail.

Q4. List the applications of tree.

Q5. Explain the different types of tree traversing.

**Assignment 4**

Q1. Explain the various representations of graph with examples in detail?

Q2. Define topological sort. Explain with an example?

Q3. Explain the breadth-first search algorithm

Q4. Explain the depth-first search algorithm.

Q5. Define a minimum cost spanning tree.

**Data Structures Lab**

**Experiments**

1. Write a C program to implement operations on an Array, such as Traversing, Insertion, & Deletion operations
2. Write a C program based on Recursion, such as the Towers of Hanoi, Fibonacci series, etc.
3. Write a C program to implement a single-linked list
4. Write a C program to implement a double single-linked list
5. Write a C program to implement a circular single-linked list
6. Write a C program to implement stack operations
7. Write a C program to convert an infix expression to post fix expression
8. Write a C program to implement queue operations
9. Write a C program to implement tree traversal
10. Write a C program to implement insertion sort
11. Write a C program to implement binary search
12. Write a C program to implement a graph