

**EC 8393 Fundamentals of Data Structures in C**

**Important 13mark questions**

**Unit I**

1. Write a C program to get a 4-digit number and display the reverse of the same number.
2. Examine the various data types in C with an example.

**Unit II**

1. Illustrate pass by value and pass by reference in functions with an example.
2. Differentiate the data types, structures with unions.

**Unit III**

1. What is a linked list? Examine the various types of linked list creations with their operations in C.
2. How expression evaluation is done using stacks? Illustrate it with an example.

**Unit IV**

1. Write a C program to insert set of numbers in a binary search tree and display the content of the same with in-order traversal.
2. Explain set representation and Union. Find operations with suitable examples.

**Unit V**

1. Write a procedure to search for a number among the given set of numbers using Linear and binary search algorithms and compare and contrast both with an example including time complexity.
2. How 2-way merge sort helps in sorting a given set of numbers in an efficient manner? Evaluate it for the following list:  
30, 10, 49, 34, 69, 12, 96, 53, 2, 43, 80