**SWARNANDHRA COLLEGE OF ENGINEERING & TECHNOLOGY**

DEPARTMENT OF MASTER OF COMPUTR APPLICATIONS

**II SEMESTER**

SUBJECT: Data Structures using C Subject Code: 16MC2T03

Regulation: R16

**UNIT-1**

1. What is Hashing? Write Different Hashing Techniques with example
2. What is Searching?  Explain Binary Search Process
3. Explain Bubble Sort Process and Write a C Program for Bubble Sort
4. What is Collision?  How collision is handled explain
5. What is Quick Sort explain with example
6. Define the importance of  Merge Sort?   Write a c program for Merge Sort

**UNIT – II**

1. What is Dynamic Memory Allocation and write Dynamic Memory Allocation functions
2. What is Single Linked List and  write functions for inserting a Node in Single Linked List.
3. Write the importance of Doubly Linked List?  Define the Process for Deleting an element in Doubly Linked List
4. Define Linked List?  Explain different types of Linked List and write advantages and disadvantages.
5. How Circular Linked List is implemented?   Explain its insertion functionalities

**UNIT – III**

1. What is Stack?  Define representation of Stack.  Implement the Stack using Arrays
2. How Stack is implemented using Linked List? Write the function for Insert and Delete Operations
3. Define the operations of Insertion and Deletion of elements in Queue
4. Define the process for evaluating the Postfix Expression with example
5. What is Circular Queue?  Explain its operations
6. Explain DEQueue and its operations
7. What is Priority Queue?  Explain its applications

**UNIT – IV**

1. Write the definition of Tree and explain basic terminology of Trees
2. What is Binary Tree?  Explain the representation of Binary Tree
3. Explain Binary Tree Traversals
4. What are Expression Trees? Explain with examples
5. What is Binary Search Tree? Explain Insertion, and Deletion Operations
6. What is Heap?   Write a C Program for Heap Sort.
7. Define Threaded Binary Tree?  Explain how a node is represented in Threaded Binary Tree.
8. Write a C Program for Searching a node in Binary Search Tree and explain it with example

**UNIT – V**

1. What is Graph?  Explain Graph Terminology
2. Explain different Graph representation Techniques
3. Discuss the implementation of DFS and BFS Graph Traversals with suitable examples
4. What is Single Source Shortest Path problem explain Dijkstra’s Algorithm
5. Explain Warshalls Algorithm
6. Explain Floyd’s Algorithm
7. What is Minimum Cost Spanning Tree?  Write a C Program for Prim’s Algorithm
8. Explain Kruskals Algorithm.