

Subject: Data Structure using C++

Total Marks: 80

Instructions: Answer all 16 questions. Each question carries 5 marks.

1. Define data structure. List types of data structures.
2. Explain arrays with example in C++.
3. Describe stack and its operations using C++ code.
4. Write a program to implement a queue using arrays.
5. Differentiate between linear and non-linear data structures.
6. Explain linked list and its types.
7. Write C++ code to insert and delete nodes in a singly linked list.
8. What is a doubly linked list? Give an example.
9. Describe binary tree and its traversal methods.
10. Write a C++ program for inorder traversal of binary tree.
11. Explain the concept of graph and its representations.
12. What is recursion? How is it used in data structures?
13. Explain searching algorithms: linear and binary search.
14. Describe sorting algorithms: bubble sort and selection sort.
15. Write a C++ program for bubble sort.
16. What are hash tables? Explain with example.