Data Structures Question Bank

UNIT-I

1. Define algorithm and give the steps for algorithm.
2. Explain in detail about how an algorithm can be represented as pseudo code.
3. Discuss about 1-D & 2-D Arrays.
4. Discuss the concept of ordered list.
5. Define stack give brief introduction in stack and explain operation performed on stack.
6. Explain in detail the various operation of stack ADT.
7. Define infix, prefix, and postfix expressions.
8. Write how to convert an infix expression in to postfix.

UNIT-II

1. What is recursion explain with example also write the advantages and disadvantages of recursion.
2. Discuss about various types of recursion.
3. Write about iteration versus recursion.
4. What is queue explain primitive operation on queue.
5. Write in brief about queue ADT.
6. Discuss about Enqueue & Deque.
7. Discuss in detail about array implementation of queue ADT.
8. Discuss about CQ.
9. Define linked list & explain primitive operations performed on linked list with C++ program.
10. Discuss in brief about singly linked and double linked list.
11. Garbage collection.

UNIT-III

1. Define tree explain terminologies associated with it.
2. Define Binary tree and full BT, Complete BT.
3. Explain in detail about binary tree traversal techniques.
4. Explain about applications of binary tree.
5. Define graph give the basic terminologies of graph.

6. Short note on
   - Adjacency matrix
   - Incidence matrix
   - Adjacency list
   - Spanning tree
   - Minimum spanning tree
7. Discuss various graph traversal techniques (DFS&BFS).
8. Explain prim's algorithm and illustrate with suitable example.
9. Explain kruskal's algorithm.
10. What is hashing explain in detail.

UNIT-IV

1. What is searching? Explain various types of searching techniques.
2. What is bubble sort? Explain with an example.
3. Insertion sort.
4. Selection sort.
5. Quick sort.
6. Merge sort.
7. Define heap? Explain Heap ADT.
8. Heap sort.