

Question bank

Part- A

1. **Define data type and Abstract data type. Comment upon the significance of both.**
2. **Define Linear Data Structure.**
3. **What is the advantage of an ADT?**
4. **Should arrays or linked lists be used for the following types of applications. Justify the answer.**
 - a) **Many search operation in sorted list**
 - Many search operation in unsorted list.**
5. Write down the definition of data structure.
6. Define ADT (Abstract Data Type)?
7. Define linear data structure?
8. What are different types of Linked List?
9. What is the difference between array and linked list?

Part – B

1. **Convert the given expression from infix to postfix**
 - i) $(a + b) * (c + d * e) * f$
 - ii) $a - b * c / d + e$
2. **Evaluate the given postfix expression by using stack concept**
 - i) $5 \ 5 \ 2 \ 3 \ + \ 6 \ * \ + \ 3 \ + \ *$
 - ii) $10 \ 8 \ + \ 5 \ * \ - \ 2$
3. **i) What is Stack?**
 - ii) **Write the pseudo code for Push and POP operation from Stack. Give with suitable example.**
4. **i) What is Queue? Explain by comparing with stack.**
 - ii) **Write the pseudo code for inserting and deletion from Queue.**
5. **List and brief explain the applications of a Stack.**

6. **Write and trace the following algorithms with suitable example.**
 - I. **Breadth first traversal**
 - II. **Depth first traversal**
7. Explain about Linked list, its Types, insertion and deletion routines with suitable example.
8. Explain the insertion and deletion operation in singly linked list.
9. Explain array based implementation of list with an example program.
10. Explain array based implementation of list with an example program.
11. Given singly linked list whose first node is pointed to by the pointer variable C formulate an algorithm to delete the first occurrence of X from the list and Insert the element X after the position P in the list.