

DSU Unit Test 1 Question Bank: Chap 1, Chap 2, Chap 4

Chapter 1 :

1. List any four operations performed on data structure.
2. Describe with example, time complexity and space complexity of an algorithm.
3. Describe classification of data structure with example of each.
4. Define Algorithm. Describe different approaches for designing an algorithm.
5. Describe Big 'O' notation. Also give example.
6. Compare Top-down approach v/s Bottom –up approach
7. What is data structure? why do we need data structure ?
8. Define primitive data structure. Give 4 operations of Data structure.
9. Explain Linear and Non-Linear data structure.
10. Explain different ways of analysing algorithm.
11. Enlist and explain characteristics of algorithm.
12. Describe abstract data type.

Chapter 2 :

1. State any four differences between linear search and binary search.
2. Perform radix sort on the following list to arrange all array elements in ascending order
3. 333 , 56 , 788 , 32 , 100 , 77
4. Describe working of selection sort method with suitable example.

5. Write a 'C' program to perform bubble sort on array of size N.
6. Write a 'C' program to perform selection sort on array of size N.
7. Write a 'C' program to perform insertion sort on array of size N.
8. Describe working of binary search method. Give stepwise procedure to search 55 in the following list:
9. List: 13,12,5,29,10,65,55, 80
10. Define sorting. Write its types.
11. Write a 'program in c' language for selection sort.
12. Perform bubble sort on following data to sort all elements in ascending order. 44 , 45 , 30, 25 , 20 , 10 , 15.
13. Consider the following array: 55 65 25 75 45 85 10
Write stepwise procedure to find 45 using linear search.
14. Describe working of radix sort with example.
15. Define searching. Give its type
Write a program to sort the numbers in descending orders using selection sort.
16. Define internal and external sorting.
17. Write algorithm of insertion sort.
18. Find the position of element 29 using binary search method in an array A given below:
19. A = { 11 , 5 , 21 , 3 , 29 , 17 , 2 , 43 }
20. Explain working of quick sort with suitable example.
21. Give complexity of following method:
22. Bubble sort , Insertion sort , Selection sort , Radix sort

Chapter 4 :

1. Define the terms pointer and NULL pointer.
2. Describe with example advantage of doubly linked list over linear linked list.
3. Describe how to delete a node from linear linked list.
4. With example, describe how circular linked list works when a node is deleted from beginning of list.
5. Write a 'C' program to insert new node at the end of linear linked list.
6. State and describe three types of linked list with suitable diagram.
7. Explain the procedure for deleting first node from a singly linked list.
8. Difference between array and link list.
9. Define linked list. Write its two advantages and disadvantages.
10. Write an algorithm to insert a new node at begin and at last of a singly linked list. Give example.
11. Describe working of doubly linked list. Write syntax used for double linked list in program
12. Write an algorithm to traverse a singly linked list.
13. Describe advantage of doubly link list over singly link list.
14. Write algorithm to count number of nodes in a link list.
15. Write function to find smallest element from link list.
16. Write function to search an element from link list.
17. Write algorithm of link list creation.
18. Write function to traverse circular link list.
19. Describe pictorial representation of deletion from link list.

20 Write algorithm to traverse link list.