Data Structures

Chapter 1

1. What is data, datum/data item?
2. What are elementary and group data items?
3. What is field, record and file?
4. What is entity and entity set?
5. What is primary and secondary key?
6. What is fixed length and variable length record? Give example.
7. What are three steps that we study in data structure?
8. What is data structure?
9. What are the different types of data structure?
10. What are the operations that can be performed on data structure?
11. What is traversing?
12. What is complexity?
13. What is time-space trade off?

Chapter 4

14. What is linear and non-linear data structure?
15. Define linear array.
16. How to represent linear array into memory?
17. What are the operations that can be performed on array?
18. How can you calculate the length of an array?
19. How to calculate the address of an element of linear array?
20. Algorithm for traversing a linear array using while loop.
21. Algorithm for traversing a linear array using for loop.
22. Algorithm for inserting an element in linear array and its complexity.
23. Algorithm for deleting an element from linear array and its complexity.
24. Algorithm for linear search in linear array and its complexity.
25. Algorithm for binary search in linear array and its complexity.
26. Define two-dimensional array.
27. What are the two ways to represent two-dimensional array into memory?
28. How to calculate the size of two-dimensional array.
29. How to calculate the address of an element in two-dimensional array?
30. What is a pointer?
31. What is pointer array?
32. What is a record?
33. How a record can be represented in memory using parallel array?
34. How a record with variable length can be represented in memory?
35. Algorithm for addition of two 2-D matrices.
36. Algorithm for multiplication of two 2-D matrices.
37. What is sparse matrix?
38. What is triangular sparse matrix?
39. How to calculate the size of linear array to store elements of triangular sparse matrix?

40. How to find the elements of triangular sparse matrix in corresponding linear array?
41. What is tridiagonal sparse matrix?
42. How to calculate the size of linear array to store elements of tridiagonal sparse matrix?
43. How to find the elements of tridiagonal sparse matrix in corresponding linear array?