VR17

17IT3303

II/IV B.TECH. DEGREE EXAMINATION

THIRD SEMESTER

DATA STRUCTURES QUESTION BANK

One mark questions:

1. What is heap property? Give example for heap.
2. List the differences between Linear and binary search methods.
3. What is hash function?
4. How graphs can be represented in computer memory? Give examples.
5. What is AVL Tree?
6. What are the types of sorting?
7. What is Hashing?
8. Give example for 2-3-4 Tree.
9. How to represent graphs in computer memory? Give example.
10. What is balance factor?
11. Define Data structure
12. Give an example for Binary search tree. Also write the properties.
13. How polynomial manipulation can be done using List? Give example
14. Define the terms depth of a node and height of a tree.
15. What are non linear Data structures? Give examples
16. How to represent expressions using trees? Give example
17. If the post order traversal in a tree is DEBFCA then find in order and Justify.
18. What is time complexity of an algorithm? Give example.
19. Which data structure can be useful in polynomial manipulation? Give example.
20. How many nodes are required to construct complete binary tree with height 4? Justify

UNIT-I

1. What is searching? Write a C Program for Linear and binary search methods. Also list the differences
2. What is Performance of an algorithm? Explain
3. Write Algorithm for Infix to postfix conversion. Also give Example
4. Write Algorithm for Postfix evaluation. Also give Example
5. Describe Stack ADT using Array and List.

UNIT-2

6. Describe Queue ADT using Array and List.
7. Describe circular Queue ADT using Array.
8. Write algorithm for Single/Double/Circular linked list ADT Operations
9. Describe Polynomial manipulation in C.

UNIT-3

10. Explain Tree traversal techniques? Also implement C program for them.
11. Write algorithm for BST insertion and deletion in all cases
12. Explain AVL Tree and its rotations with examples.
13. Explain B Tree Insertion and deletion Algorithm.

UNIT-4

14. Explain graph ADT
15. Write Quick sort C Program and Example
16. Write Merge sort C Program and Example
17. Explain Shell sort with Example
18. Describe all types of Hashing.