VIJAYA DEGREE COLLEGE
II SEM BCA
Model Question paper-1

SUBJECT: DATA STRUCTURES USING C(BCA203T)

TIME: 3 hrs **MARKS: 70**

Section-A

Answer any **TEN** questions ,each question carries **TWO** marks: **10X2=20**

1. What is a data structure? Explain its classification with an example.
2. Write an algorithm for insertion and deletion operation on arrays.
3. Explain binary search.
4. Give the analysis of bubble sort.
5. Explain malloc function.
6. Mention any two difference between static and dynamic memory allocation
7. Define stack.Mention operations on Stack.
8. Write an algorithm to delete a node at beginning from the linked list.
9. What is circular queue?
10. Mention different ways of graph traversals.
11. List different operations on binary tree.
12. What is binary search tree?

SECTION-B

Answer any **FIVE** questions,each question carries **TEN** marks: **5X10=50**

13. (a) Explain the various operations on data structures.

    (b) Write a note on Asymptotic notations. **(5+5)**

14. (a) Explain the memory representation of arrays.

    (b)Write a C program to extract substring from given string. **(5+5)**

15. (a) Write a c function to perform push and pop operation on stack.

    (b) Define priority queue. Write an algorithm to delete an element from priority queue. **(5+5)**

16. (a)Write an algorithm to implement bubble sort.

    (b) What is searching?.Explain binary search with an example. **(5+5)**

17. (a) Define linked list.Explain different types of linked list. **(5+5)**

    (b) Write an algorithm to insert a node at beginning into linked list.

18. (a) Write an algorithm for Breadth First Search.

    (b) Explain Strictly and complete binary tree with example. **(5+5)**

19. (a) Write a c program to conatenate two strings without using built-in function.

    (b) Explain String as ADT. **(5+5)**

20. (a) Write a short note on BST.

    (b) Write a c program to implement tree traversals. **(5+5)**