ANNA UNIVERSITY OF TECHNOLOGY, COIMBATORE

B.E / B.TECH. DEGREE EXAMINATIONS : NOV / DEC 2010

REGULATIONS : 2008

THIRD SEMESTER : CSE

080230007 - DATA STRUCTURES

Time: 3 Hours

Max. Marks : 100

PART - A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. What is Abstract Data Type?

2. State the difference between Arrays and linked lists

3. Give any four applications of Stack

4. Write a recursive routine to perform factorial of a given number

5. List out operations of list ADT

6. What is Tree and give some terminologies in Tree with example

7. List out steps involved in deleting a node from binary search tree

8. Traverse the given tree using inorder, preorder and post order traversals
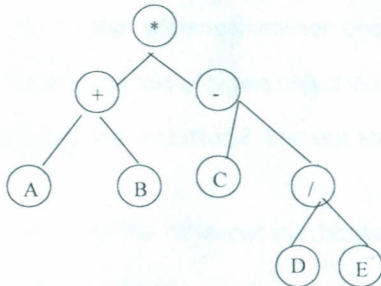
9. What is Threaded Binary Tree.

10. What are the properties of binary heap?

11. What do you mean by self-adjusting Tree?

12. What is B-Tree and give its General representation?

13. Give comparison between binary tree and binary search tree

14. What is path comparison?

15. Define equivalence relation.

16. What is rehashing?

17. What is separate chaining?

18. Define degree and cycle in a graph

19. What is Euler path and Euler circuit?

20. What is various application of depth first search?

PART - B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. a) Explain array implementation of stack   (6)

    b) Convert the given infix expression to post fix expression   (6)

       A*B+(C-D/E)#

22. a)Explain Doubly linked list using both insert and delete operation.   (8)

    b)Explain the linked representation of threaded binary tree with example   (4)

23. a)What is binary search tree? And give routine to insert the following elements

       6, 2, 4,1,3,8   (8)

    b) Construct expression tree for following term ab+c*   (4)

24. a)What are different Tree traversal terminologies and explain with an example (8)

    b) What is circular Queue and give procedure to insert an element in circular

       Queue   (4)

25. Write a procedure to perform the different rotations in AVL tree and the insert the

    Elements 3,2,1,4,5,6,7 into an initially empty AVL tree

26. What is binary heap and explain its basic operations can be done in heap with Example.

27. What is open addressing and explain the three common resolution strategies with Inserting the keys {89, 18, 49, 58, 69}

28. Explain Prim's and Kruskal's algorithm in detail.

*******THE END********