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CAIIS-N 124 A-2K14

B.C.A. IInd Semester Degree Examination

Computer Science

(Data Structure using C)

Paper - 2.6

(New)

Time :3 Hours Maximum Marks : 80

Section A

1. Answer all the following questions. Each question carries **2** Marks. **(10×2=20)**

   a. Define Abstract data type.

   b. Define merging

   c. What is meant by overflow?

   d. What are the components of doubly-linked list?

   e. FIFO stands for?

   f. Which Queue is called double-ended queue? Show its structure?

   g. Define Recursion. Name the programs where we use a Recursion.

   h. What is omega notation?

   i. Which sorting is called divide and conquer sorting - technique?

   j. BST stands for?

Section - B

Answer any **four** questions. Each question carries **5** marks **(4×5=20)**

2. Explain briefly different types of operations performed on data structure
3. Write an algorithm for 'Q' delete
4. Write a 'C' program to delete the element in an Array
5. Draw the binary tree whose traversal are as follows

   i) In order : D B E A F C G

   ii) Post order : D E B F G C A

6. Explain briefly Binary tree.

7. Write a note on Heap sort.

Section - C

Answer any **four** questions. Each question carries **10** marks **(4×10=40)**

8. Explain with algorithm different types of inserting a node in a circular-linked list.

9. Define stack. Explain PUSH and POP operation on stack.

10. Define Tree. Explain Tree Terminology.

11. Write a 'C' program for Insertion sort.

12. Explain threaded Binary tree with an example.

13. Distinguish between

    a) General Tree and Binary Tree

    b) Time complexity and space complexity.
