2012

Course : B.C.A (2nd YEAR)

Paper : 4

Time : 3 hours

Full Marks : 75

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. **What is data structure ? Explain the different operations to be performed on data structure .**
2. **How do you implement a stack in 'C' ? Write algorithms to perform push and pop operations on a stack.**
3. **What is circular queue ? What are its advantages ? Write the algorithms for the insertion and deletion operations performed on the circular queue.**
4. **Evaluate the following postfix expressions :**

   (i) ABC* + given A = 12.5, B=6.35, C=5.75
   (ii) AB?C* given A = 3, B = 2, C = 8

continue

(iii) AB + CD - * given A = 1 , B = 2, C = 3, D = 4

5. What are the different types of binary trees ? Discuss the array representation of a binary tree.
6. Explain the properties of a B-tree ? Write the algorithm for insertion in a B – tree.
7. Describe the complexity analysis of sequential searching. Write the algorithm to find the desired element in an array using sequential searching technique.
8. Describe the efficiency of Quick - sort algorithm. Write a quick sort algorithm to arrange a list of integers.
9. Explain the different representations of a graph data structure.
10. Write short notes on any three of the following :

(a) Abstract data type
(b) Dequeue
(c) Di –graph
(d) Recursion
(e) List

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Continue for Composition. paper .