

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.

PPU Learn.com

- 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 $A = 3, B = 2, C = 8$**

(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

----- X -----