BCA-12

June - Examination 2018

BCA Pt. II Examination

Data Structure and Algorithm

Paper - BCA-12

Time : 3 Hours]   **[Max. Marks :- 100**

Note: The question paper is divided into three sections A, B and C. Write answers as per given instructions.

Section - A   **10 × 2 = 20**

(Very Short Answer Questions)

Note: Answer **all** questions. As per the nature of the question delimit your answer in one word, one sentence or maximum upto 30 words. Each question carries 2 marks.

1)   (i)   What do you mean by a record?

(ii)   What are applications of linked list?

(iii) Explain priority queue?

(iv) What is a circular linked list?

(v)   Differentiate int* x and int** x?

(vi) What is a bubble sort and how do you perform it?

(vii) Define Searching?

(viii) Explain sibling and forest in a tree.

(ix) Define Recursion. State advantages and disadvantages.

(x) What do you mean by terminal node? Explain with an example.

Section - B $\qquad$ $4 \times 10 = 40$

(Short Answer Questions)

Note: Answer **any four** questions. Each answer should not exceed 200 words. Each question carries 10 marks.

2) Compare between dynamic memory allocation and static memory allocation.

3) Write the algorithm for delete operation in a circular queue.

4) Compare different sorting techniques and which sorting techniques would you prefer and why

5) Explain difference between Time Complexity and space complexity.

6) What is stack operation? Convert following infix expression into prefix and postfix format (a+(b-c))*((d-e)/(f+g))

7) Discuss Tower of Hanoi.

8) Differentiate between binary search and linear search. Write algorithm of binary search.

9) What are advantages of dynamic memory allocation technique over static memory allocation?

Section - C $2 \times 20 = 40$

(Long Answer Questions)

Note: Answer **any two** questions. You have to delimit your each answer maximum upto 500 words. Each question carries 20 marks.

10) Explain with examples Binary tree and Binary search tree ADT.

11) Classify the Hashing Functions and explain each with an example.

12) Describe the linked Implementation of stacks and Queues.

13) What is Graph? Explain any one algorithm to find shortest path in a given graph with suitable example.

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