

BCA-12
December - Examination 2015
BCA IInd Year 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 x 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 is pointer?
- (ii) Define algorithm.
- (iii) Which data structure is used in Breadth first search?
- (iv) What are applications of spanning tree?
- (v) What is root node?
- (vi) Give one difference between method and function.
- (vii) Give some examples of sparse matrix.

- (viii) What is symbol table?
- (ix) Define complete graph.
- (x) State Knapsack problem.

Section - B

4 x 10 = 40

(Short Answer Questions)

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

- 2) Write short note on implementation of linked list in memory.
- 3) Define stack as important data structure. Explain their basic operation.
- 4) What is the role of queue in computer science? Explain various types of queue.
- 5) Discuss the application of graph.
- 6) Explain the drawbacks of recursive function.
- 7) What are the various characteristics of algorithm? Explain with example.
- 8) Write short note on bubble sort with suitable example.
- 9) Explain worst case complexity of quick sort with example.

Section - C

2 x 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) What do you mean by heap tree? Insert the following list of data in an heap tree
50, 63, 65, 69, 71, 72, 200, 0, 7, 63
 - 11) What do you mean by searching? Explain the difference between BFS and DFS.
 - 12) Explain the concept of theta, omega and big oh notations with suitable diagram.
 - 13) What is linked list? Explain the insertion and deletion in linked list with algorithm.
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