Total No. of Questions : 7   Total No. of Pages : 01

BCA (Sem.-2nd)

DATA STRUCTURES

Subject Code : BC-204

Paper ID : [B0208]

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY.

2. Attempt any FOUR questions from SECTION-B.

SECTION-A   **(10 × 2 = 20 Marks)**

1. (a) What do you mean by algorithm?

   (b) What are the advantages of arrays over linked list?

   (c) What do you mean by priority queue?

   (d) What do you mean by binary trees? How they differ from ordinary basic trees?

ish notation.

   (f) Describe the various operations that can be performed on various data structures.

   (g) Explain the concept of a heap.

   (h) Name any four sorting algorithms.

   (i) What is the concept of threading in trees ?

   (j) What are the applications of stacks ?

SECTION-B   **(4 × 10 = 40 Marks)**

2. In finding out the complexity of any algorithm, explain the time space trade-off.

3. What is the difference between a stack and queue? Write an algorithm to

4. Write an algorithm to sort a list of data items using bubble sort.

5. Explain the difference between array and linked list in terms of insertion and searching of any data items.

6. How are binary trees represented in memory ? Write an algorithm for pre-order traversal of a binary tree.

7. Give two examples of each linear and non-linear data structure. Also give two applications for each example given by you.

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