Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 2**

Total No. of Questions : 07

BCA (Sem.–3)
DATA STRUCTURES
Subject Code : BSBC-302 (2011 Batch)
Paper ID : [B0229]

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students has to attempt any FOUR questions.**

SECTION-A

l. Write briefly :

   a) Discuss time space trade off.

   b) What is the difference between a linked list and an array?

   c) What is garbage collection?

   d) What is linear search? How it is different from binary search?

   e) Define complete binary tree.

   f) Define the big O notation.

   g) What are the advantages of doubly linked list?

   h) What is dynamic storage management?

   i) Give advantage of binary search algorithm.

   j) What is priority queue?

SECTION-B

2. What is data and data structure? Explain different categories of data structures. Also explain various common operations that can be applied to data structure.

3. Write an algorithm to sort integers using selection sort.

4. What do you mean by recursion? Write an algorithm to find factorial of a number using recursion.

5. What is circular linked list? Write an algorithm to insert a node at the beginning of circular linked list.

6. Write an algorithm for preorder, inorder and postorder traversal in a tree.

7. Write an algorithm for Bubble sort. Discuss with help of an example.