Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages: 02**

Total No. of Questions: 07

BCA (2011 & Onward)   (Sem. – 3)
DATA STRUCTURES
M Code: 10058
Subject Code: BSBC-302
Paper ID: [B0229]

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

INSTRUCTIONS 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 have to attempt any FOUR questions.**

SECTION A

1. Attempt all questions:

    a)   Write short note on recursion.

    b)   List the various types of queues.

    c)   What are the various non-linear data structures?

    d)   What do you mean by algorithm?

    e)   What is the difference between data and information?

    f)   What are the front and rear pointers of queue?

    g)   What is need for garbage collection?

    h)   Discuss Polish notation.

    i)   What is problem analysis? Explain.

    j)   What do you mean by Dynamic Storage Management?

SECTION B

2. What do you mean by data and data structure? What is need of algorithm complexity and how it is evaluated? Describe any notation used to represent algorithm complexity.

3. Write an algorithm for Binary Search. How it is better from Linear Search?

4. What are the various operations possible on stacks? Explain the algorithm for each of them?

5. In what way, doubly linked list is better than single linked list. Give examples.

6. What are the various binary tree traversal techniques? Discuss with example and algorithm.

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