Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 07

BCA (2013 & Onward) (Sem.–3)
DATA STRUCTURES
Subject Code : BSBC-302
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 a student has to attempt any FOUR questions.**

SECTION-A

Q1 Answer briefly :

a) Define algorithm.

b) List various characteristics of an algorithm.

c) How linked list can be represented in a memory?

d) Define underflow and overflow conditions.

e) Define record.

f) What is the significance of an array?

g) Define FIFO and LIFO.

h) List various data structure operations.

i) What is a generalized list?

j) What is space-time trade-off?

SECTION-B

Q2 Define Data Structure. What are different classifications of data structures? Explain with examples.

Q3 Define stack. How stack can be implemented using an array and linked list? Explain.

Q4 What is pre and post-order tree traversal? Write and explain their algorithms.

Q5 Define queue. How insertion and deletion operations are performed over a queue? Explain.

Q6 What is bubble sort? How it is different from selection sort? Explain how the following list can be sorted using the bubble sort algorithm.

13 7 9 32 76 98 100 22 88 6 19

Q7 Explain the following :

a) Application of tree.

b) Working of insertion sort algorithm.