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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.

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