

Roll No.

Total No. of Questions : 07]

[Total No. of Pages : 02

BCA (S^cm. - 2nd)
DATA STRUCTURES
SUBJECT CODE : BC - 204 (N2)
Paper ID : [B0208]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.

Section - A**Q1)****(10 × 2 = 20)**

- a) What is a big O notation?
- b) What is a top pointer of stack?
- c) What is a post order traversal?
- d) What is the difference between data and information?
- e) What is the complexity of linear search?
- f) What is a threaded binary tree?
- g) What are the front and rear pointers of queue?
- h) What is need for garbage collection?
- i) What is an algorithm?
- j) How binary tree is represented as an doubly link list

Section - B**(4 × 10 = 40)****Q2)** Suppose the names of few students of a class are as below :

Ram
Sham
Mohan
Sohan
Vimal
Komal

J-330 [8129]**P.T.O.**

It is assumed that the names of the students is represented as a single link list. Write an algorithm to insert the name of a student RAMAN between Sham and Mohan. Represent it graphically also.

- Q3)** What is the postfix and prefix representation of the following expression
 $(A * (b + c)) + (b/d) * a + z$
 $(a + (b + c * (d + e))) + f$
- Q4)** What are the various operations possible on stacks. Explain the algorithm for each of them?
- Q5)** Show the result of inserting 6, 3, 5, 8, 12, 15, 18, 19, 20, 24 into an empty binary search tree.
- Q6)** What are the various binary tree traversal techniques? Discuss with example and algorithm.
- Q7)** Suppose a sequence of numbers is given like : 5, 1, 6, 7, 9, 22, 10, 55, 45, 34, how this numbers will be sorted in
- (a) Insertion sorting.
 - (b) Bubble sorting.
 - (c) Quick sorting.

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