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

Total No. of Questions : 09

BMCI (2014 & Onwards) (Sem.–3)

DATA STRUCTURES

Subject Code : BSBC-302

M.Code : 72583

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 FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Q1. Answer briefly :

1. What are the fundamental principle of recursion? Explain
2. What do you understand by polish notation? Explain
3. What do the terms LIFO and FIFO means? Explain
4. Give an example that shows how a stack is used by a computer system.
5. How tree is represented in memory
6. What is a garbage collection?
7. What is a circular queue?
8. How array elements are accessed in two dimensional array?
9. What is a track of a storage device?
10. What is an algorithm?

SECTION-B

Q2. Explain the algorithm of bubble sort with an example.

Q3. Construct the binary tree for the following expression :

$$(2x + 5)(3x – y+8)$$

Q4. Suppose a sequence of numbers is given like :

5,10,12,18, 56, 68, 52, 85, 95

a) What are the various steps in which the number 52 will be found by the Binary search?

b) In how many steps the number 52 will be found in the linear search.

c) In how many steps it will be found in the binary search that the number 83 does not exist in this array in the array?

Q5. Suppose a binary tree T is in the memory. Write a recursive algorithm which find the number of nodes in T.

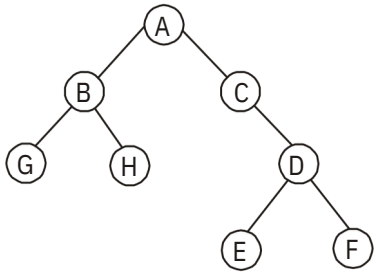
Q6. What is recursion? How is it implemented?

SECTION-C

Q7. What are the various operations possible on stacks? Explain the algorithm for each of them.

Q8. What are the various operations possible on a Circular link list? Explain with algorithm.

Q9. Traverse this tree in Pre order, Inorder, and Postorder.



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NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student..