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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Software Engineering) (Sem.-3)

DATA STRUCTURE & ALGORITHMS

Subject Code : SE-301-19

M.Code : 78675

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 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**Write briefly :**

- 1) Big 'O' Notation
- 2) Applications of Stack
- 3) In-degree
- 4) Dynamic memory allocation
- 5) Advantages of Linked List over Array
- 6) Polish Notation
- 7) AVL Tree
- 8) Binary Tree
- 9) Algorithm
- 10) Dangling Pointer

SECTION-B

- 11) What is Data Structure? Explain various operations on it.
- 12) Differentiate between stacks and queue. How they are implemented using linked list?
- 13) Explain depth first search and breadth first search in graphs.
- 14) Write a program/algorithm to generate Fibonacci series using recursion.
- 15) Explain the working of quick sort with example.

SECTION-C

- 16) A Binary Tree T has 9 nodes :

Inorder :	E	A	C	K	F	H	D	B	G
Preorder :	F	A	E	K	C	D	H	G	B

- 17) What is Heap? How to insert and delete a node from heap?
- 18) Define hashing and hash table. Also explain the concept of collision and its resolution.

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.