Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   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.