Q.P. Code: 16CS505 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year I Semester Supplementary Examinations June 2019

ADVANCED DATA STRUCTURES THROUGH C++

(CSE & CSIT)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	**a**	Explain about the Access Controls. How they can be used to provide the accessing benefit with an example?	6 M
	b	What is inline function? Write a C++ program to find the area of circle using inline function.	6 M

OR

2	**a**	Describe 'this' pointer and friend function with suitable examples.	7M
	b	Write a program using a try block to detect and throw an exception if the conditions " divideby- zero" occurs.	5M

UNIT-II

3	**a**	Compare function overloading and function overriding.	6M
	b	Write a C++ program to overload binary plus (+) operator to add two strings using Operator Overloading concept.	6M

OR

4	**a**	What are abstract classes? Define the rules to create an abstract class with an example.	6M
	b	Write a C++ program to copy one file data into another file using File I/O concept.	6M

UNIT-III

5	**a**	Explain about the Binary Search Tree. What are the rules to create a BST?	5M
	b	Write the C++ code for Deletion operation of Binary Search Tree (BST). Perform the following operations i) Delete a leaf node ii) delete a node having one child iii) delete a node having two children.	7M

OR

6	**a**	Explain the following Graph Terminologies: i) Graph Definition ii) Directed Acyclic Graph iii) Isomorphic Graph iv) Weighted Graph v) Digraph vi) Completely Connected Graph.	12M

UNIT-IV

7	**a**	Define Collision and discuss about Collision resolution Techniques such as i) Linear Probing ii)Random Probing iii)Double Hashing iv) Quadratic Probing	12M

OR

8	**a**	Explain Skip List. Why it is called as a Randomized Data Structure.	4M
	b	Explain the Operations Insertion and Deletion with a Skip List.	8M

UNIT-V

9	**a**	Explain the issues with AVL Tree and recommend how Red Black Trees can be a solution for it.	8M
	b	Explain the properties of Red Black Trees with an example.	4M

OR

10	**a**	Define M-Way Search Tree. How the height has been balanced in M-way Search Trees.	4M
	b	Differentiate B Trees and B+ Trees with an example for each.	8M

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