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

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year I Semester (R16) Regular Examinations November 2017
ADVANCED DATA STRUCTURES THROUGH C++
(COMPUTER SCEINCE AND ENGINEERING)

Time: **3 hours** Max. Marks: **60**

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

UNIT-I

1		What are the Object Oriented Programming principles? Explain about the Data Abstraction and Polymorphism with example.	12M

OR

2		Create a 'DISTANCE' class with : -feet and inches as data members -member function to input distance -member function to output distance -member function to add two distance objects Write a main function to create objects of DISTANCE class. Input two distances and output the sum.	12M

UNIT-II

3		What is Inheritance? Explain types of Inheritances? Give an example of hybrid inheritance.	12M

OR

4	a	Define stream I/O?	2M
	b	Explain the use of if stream and of stream classes?	4M
	c	Write a C++ program to check whether the given file is available or not.	6M

UNIT-III

5	a	What is a Binary Tree? Explain the preorder, in order and post order traversals?	6M
	b	Write the code for Binary Tree Insertion.	6M

OR

6	a	Illustrate in how many ways a Graph can be represented with example i. Adjacency Matrix ii. Incidence Matrix iii. Adjacency List	12M

UNIT-IV

7	a	Define Collision and discuss about Collision resolution Techniques such as a. Linear Probing b. Random Probing c. Double Hashing d. Quadratic Probing	12M

OR

8	a	Construct a Max Heap for the Elements: 4 1 3 2 16 19 10 14 8 7	6M
	b	Explain the role of a Complete Binary Tree in a Priority Queue along with its properties.	6M

UNIT-V

9	a	Explain different types of Rotations associated with AVL Tree with an example for each.	12M

OR

10	a	Define M-Way Search Tree. How the height has been balanced in M-way Search Trees.	8M
	b	Explain the Node Structure of a B-Tree.	4M

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