C **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 53827

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Third Semester

Biomedical Engineering

15UIT327-OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURES

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Which of the following is not a jump statement in C++? CO1-R

   (a) break (b) goto

   (c) exit (d) switch

2. The _____ mode tells C++ to open a file for input CO2- R

   (a) add::ios (b) in::file (c) ios::app (d) ios::in

3. A pointer variable which contains the location at the top element of the stack is called CO3- R

   (a) Top (b) Last (c) Final (d) End

4. What are the balance factors in AVL trees? CO4- R

   (a) 1,-1,0 (b) -2,-1,0 (c) 1,2,3 (d) 2,-1,1

5. _____ sorting algorithm is frequently used when n is small where n is total number of elements? CO5- R

   (a) Heap (b) Insertion

   (c) Bubble (d) Quick

PART – B (5 x 3= 15 Marks)

6. Write a simple C++ program to swap two numbers using call by reference. CO1- App

7. Explain pointer to a pointer with example. CO2- U

8.	Illustrate the use of linked list with an example.	CO3- App	
9.	What is a Binary tree?	CO4-R	
10.	Define hash function.	CO5- U	

PART – C (5 x 16= 80 Marks)

11.	(a)	Write the function prototype. Explain Call by value and Call by reference with an example program.	CO1- App	(16)
		Or		
	(b)	Explain Constructor with suitable example. Discuss the types of Constructor with suitable example.	CO1- U	(16)
12.	(a)	Explain File Handling and Exception Handling with suitable example.	CO2- U	(16)
		Or		
	(b)	Discuss the need for exception with try, catch and throw keywords.	CO2- U	(16)
13.	(a)	What is a stack ADT? Explain array implementation of stack and discuss about any three applications of stack.	CO3- App	(16)
		Or		
	(b)	Explain the following operations in a circular queue using list implementation (i) Insert an element (ii) delete an element.	CO3- App	(16)
14.	(a)	Explain AVL tree and its rotations in detail with suitable example.	CO4-App	(16)
		Or		
	(b)	Apply Kruskal's algorithm to find the minimum spanning tree for the following graph and write the complexity of Kruskal's Algorithm.	CO4-App	(16)
15.	(a)	Write and apply shell sort algorithm to sort the following list **7, 6, 2, 5, 9, 4, 1, 3, 8**	CO5- App	(16)
		Or		
	(b)	Write a C++ program to perform binary search.	CO5- App	(16)