LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc., B.C.A., DEGREE EXAMINATION – **COMPUTER SCIENCE & APP.**

THIRD SEMESTER – **NOVEMBER 2016**

CS 3504/CA 3504 – DATA STRUCTURE USING C++

Date: 04-11-2016 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART – A

Answer ALL questions: (10x2 = 20 marks)

1. Write the rules for naming the identifiers in C++.
2. What are constant arguments?
3. Differentiate Constructor and Destructors.
4. List out the operators that cannot be overloaded using Friend function.
5. Give some of the unformatted I/O operators.
6. What are the functions that the file stream class provides?
7. Define non-linear data structures
8. State the difference between arrays and linked lists
9. Differentiate linear search and binary search.
10. What is the worst case complexity of Quick sort?

PART – B

Answer ALL questions: (5 x 8 = 40 marks)

11. (a) Explain object and classes with examples.

(OR)

(b) What is a friend function? What are the merits and demerits of using friend function?

12. (a) What is a parameterized constructor? Explain with example.

(OR)

(b) Define Virtual function. When do we make a virtual function “pure”?

13. (a)Explain about the console I/O operations in detail.

(OR)

(b) Describe the various file mode options available with example.

14. (a) Explain the Queue operations with example.

(OR)

(b) Explain the insertion and deletion operation in singly linked list.

15. (a) Explain linear search & binary search algorithm in detail.

(OR)

(b) Sort the sequence 3, 1, 4,7,5,9,2,6,5 using Insertion sort.

PART – C

Answer any TWO questions: **(2 x 20=40 marks)**

16. (a) Explain in detail about the features of Object Oriented paradigm with diagram.

    (b) Explain the various types of Inheritance with suitable example program.

17. (a) Discuss about the exception handled in C++ with example.

    (b) Define doubly linked list. Explain the various operations of doubly linked list with an Algorithm.

18. (a) Briefly explain about quick sort algorithm. Trace the quick sort algorithm for the following numbers 90,77,60,99,55,88,66.

    (b) Write a C++ program to perform addition of complex numbers.

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