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

Question Paper Code: 53089

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Electronics and Communication Engineering

15UIT326 - DATA STRUCTURES AND ALGORITHM ANALYSIS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Operator that can't be overloaded is

   (a) + (b) % (c) << (d) ? :

2. Which is not a file mode in C++ language?

   (a) ios::binary (b) ios::in (c) ios::nocreate (d) ios::create

3. Which one is not the Abstract Data Type(ADT)?

   (a) Set (b) List (c) Bool (d) Stack

4. Traversing a binary tree in the order of root, left and right subtrees is called

   (a) postorder traversal (b) preorder traversal
   (c) inorder traversal (d) none of these

5. What is the Best Case running time of Quick Sort?

   (a) N*N (b) 2*N (c) N log N (d) N*N*N

PART - B (5 x 3 = 15 Marks)

6. Define Destructor with an example.

7. What do you mean by overriding?

8. Differentiate dequeue and Priority queue.

9. Draw DAG Graph? Why the graph should be DAG in topological sort?

10. Differentiate Internal Sorting and External Sorting.

PART - C (5 x 16 = 80 Marks)

11. (a) Write a C++ program for - operator overloading for complex number using friend function. (16)

Or

(b) Express various types of constructor in C++. (16)

12. (a) Briefly explain various inheritance with an example. (16)

Or

(b) Explain Exception Handling Architecture?.Write a C++ program for handling the Exception of Divide by Zero. (16)

13. (a) Demonstrate any two Stack Application with an example. (16)

Or

(b) Design a Max Binary Heap for the following Data 56, 90, 12, 34, 79, 27, 60, 25, 88. Then sort the data with the Heap sort algorithm. (16)

14. (a) Develop an algorithm to perform various operations of Binary Search Tree Algorithm with an example. (16)

Or

(b) Review the Prim's and Kruskal's Algorithm with an example to find the Minimum Spanning Tree. (16)

15. (a) Demonstrate Quick sort algorithm for the following data: 45, 90, 23, 56, 18, 47, 62, 8, 78, 39, 98, 2. (16)

Or

(b) Describe how Greedy Technique is used in Travelling Salesman Problem. (16)