

Roll No.

Total Pages : 02

BT-7/M-20

37037

ADVANCED PROGRAMMING

EEcT-407-E

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Write an algorithm and program to insert and delete element in stack. Write various applications of stack. **20**
2. Compare 2D and 3D array. Write a program for addition of $m*n$ matrix in C++ using array. **20**

Unit II

3. Differentiate Sequential, Binary and Indexed search with example. Write worst-case space complexity and time complexities for worst, best and average case for binary search. **20**

4. Write a program and algorithm to delete an element in binary tree with suitable example. **20**

Unit III

5. Write algorithm and program for Radix sort. Derive the best and worst case time complexities for Radix sort. **20**
6. Write algorithm and program to implement merge sort. Derive relation to find out space complexity for Merge sort. **20**

Unit IV

7. Discuss various type of inheritance and applications of inheritance in detail. **20**
8. List different types of classes used in C++. Write a program to show the operation of any *three* classes with examples. **20**