



III B. TECH (II SEM) – 2024-25 – R20 Regulation

Subject: Design and Analysis of Algorithms

Assignment # 2

a) Write a recursive algorithm for displaying all permutations of given digits.

Example:

Input: 1, 2, 3

Output: 123,231,321,123,213,132

Also draw the tree structure for the recursive function.

b) Implement a program that measures and displays the total time taken by any given user program of your choice. The output must contain the starting execution time and the ending time.

c) Check whether the following polynomials expressions and time complexities are correct / incorrect:

$$10n^2 + 9 = O(n)$$

$$n^3 2^n + 6n^2 3^n = O(n^3 2^n)$$

$$n! = O(n^n)$$
