VBD

Based on New Syllabus

Based on R.T.M. Nagpur University New Syllabus

DESIGN AND ANALYSIS OF ALGORITHM

WITH VIVA-VOCE

S. Bale

SOLVED QUESTION BANK + UNIVERSITY PAPER SOLUTIONS

B.TECH. V SEMESTER

COMP. SCIENCE ENGG., INFORMATION TECH., COMP. TECH., ARTI. INTE., ARTI. INTE. & DATA SCI. (CSE, IT, CT, AI, AIDS)

B.TECH. VI SEMESTER

COMPUTER ENGINEERING (CE)

SYLLABUS

B.Tech. V SEMESTER COMPUTER TECHNOLOGY (CT)

UNIT- I **See Unit-I, II & Appendix of this book**

Algorithm, Properties of Algorithm, Summation of arithmetic and geometric series, Recurrence relations. Solutions of recurrence relations using following techniques: Characteristic equation, Recursion tree method and master method. Asymptotic notations of analysis of algorithms, Time complexity of program segments, Best case and worst case analysis of Insertion sort.

UNIT - II **See Unit-III & IV of this book**

Divide and Conquer Strategy: Binary search, Merge sort, Quick sort, Strassen's matrix multiplication.
Greedy Approach: Fractional Knapsack Problem, Huffman coding algorithm, Travelling Salesman Problem, Activity Selection Problem, Job sequencing with deadlines problem, Minimum cost spanning trees, Single source shortest path.

UNIT - III **See Unit-IV of this book**

Dynamic Programming Strategy: Longest Common Subsequence, Single source shortest paths, Travelling salesman problem, All pairs shortest path, Matrix Chain Multiplication, Multistage graphs, Optimal binary search trees, 0/1 Knapsack problem.

UNIT - IV **See Unit-V of this book**

Backtracking Strategy: n-Queen's problem, Sum of subsets, Graph coloring, Hamiltonian cycles.

UNIT - V **See Unit-VI of this book**

NP-hard and NP-Complete Problems: Non-deterministic algorithms, NP-hard and NP-complete, decision and optimization problems, Clique, Polynomial Reduction, Cook's theorem, graph based problems on NP Principle.

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UNIT - II

UNIT - III

Dynamic Programming Strategy

UNIT - IV

Backtracking Strategy:

UNIT - V

NP-hard and NP-complete pProblems:

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