CORE COURSE XI: 5B11CSC-A ALGORITHM DESIGNING

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HRS
5	5B11CSC-A	4	4	3

COURSE OUTCOME

CO1: Capable to select suitable algorithm design technique.
CO2: Able to design optimum algorithms for problems.
CO3: Skilled to design solutions for real problems.

Unit I:

Divide and Conquer – General method;Binary search, Finding the maximum and minimum, Merge sort, Quick sort, Performance measurement of quick sort, Strassen's matrix multiplication.

(20Hrs)

Unit II:

Greedy method – General method, Knapsack problem, job sequencing with deadlines, minimum cost spanning trees, prim's algorithm, kruskal's algorithms, optimal merge patterns, single source shortest path.

(22 Hrs)

Unit III:

Dynamic programming – General method, multistage graph, all pairs shortest path, single shortest path, 0/1 knapsack travelling salesperson problem.

(15Hrs)

Unit IV:

Backtracking – General method, 8-queens problem, sum of subsets problem, graph coloring, Hamiltonian cycles.

(15Hrs)

Books for Study:

1. Ellis Horowitz, SartajSahni, S Rajasekharan – Computer Algorithms/C++ - Second Edition, Universities press, 2008 (Paperback Edn)

Books for Reference:

1. Introduction to the design and Analysis of Algorithms, AnanyLevitin, 2nd Edn, Pearson education.
2. The design and analysis of computer Algorithms Alfred V Aho John E Hopcroft Pearson Education.
3. Algorithm Design, Foundation, Analysis and Examples, Dr. Vijayakumar and Dr. Juby Mathew, Vimala Publications.

Marks including choice:

Unit	Marks
I	17
II	17
III	13
IV	13