

AD~1 MIDSEM ODD~2023

L 01	Introduction to the course/subject: Program Outcomes; Course Outcomes; Lesson plan; Teaching methodology; Evaluation strategy etc.
L 02	Introduction to Algorithm Design: Importance of problem solving using algorithms; Characteristic features of an algorithm(input, output, finiteness, definiteness, effectiveness, correctness, efficiency);
L 03	Introduction to Algorithm Design: Expressing algorithms (pseudocode); Basic aspects of algorithms (correctness, design and analysis)
L 04	Computational tractability: Polynomial time as a definition efficiency of an algorithm; Worst case Running times and Brute-Force Search
L 05	Asymptotic order of growth (Big-Oh, Big-Omega, Big-Theta)
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L 07	Recurrences (Iterative, Substitution and Master method)
L 08	Recurrences (contd..)
L 09	Priority Queue Implementation using Heap data structure
L 10	Priority Queue Implementation using Heap data structure
L 11	Graph: Basic definitions, applications and representations
L 12	Graph: Basic definitions, applications and representations (contd..)
L 13	Graph: Graph connectivity and graph traversal (BFS, DFS)
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L 15	Graph: Testing bipartiteness – an application of BFS

L 16	Graph: Connectivity in directed graph; Directed-Acyclic-Graph and Topological ordering
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L 18	Graph: MST using Kruskal's algorithm—the union-find data structure
L 19	Graph: MST using Kruskal's algorithm—the union-find data structure (contd..)
L 20	Graph: MST using Prim's algorithm
L 21	Graph: Shortest path problem (Dijkstra' algorithm)
L 22	Greedy Method: Interval Scheduling with proof of optimality using the Greedy Algorithm Stays Ahead
L 23	Greedy Method: Interval Scheduling with proof of optimality using the Greedy Algorithm Stays Ahead
L 24	Greedy Method: Scheduling to Minimize Lateness with proof of optimality using An Exchange Argument
L 25	Greedy Method: Optimal Caching: A More Complex Exchange Argument (no discussion on proof of optimality)
L 26	Greedy Method: Huffman Codes and Data Compression (no discussion on proof of optimality)
L 27	Greedy Method: Huffman Codes and Data Compression (no discussion on proof of optimality) contd..