Reg. No.:				

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.



PG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2025.

(For those admitted in June 2025 and later)

PROGRAMME AND BRANCH: M.Sc., COMPUTER SCIENCE

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
I	PART - III	CORE - 1	P25CS101	ANALYSIS AND DESIGN OF ALGORITHM

Date & Session: 03.11.2025/FN Time: 3 hours Maximum: 75 Marks

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Course	Bloom's K-level	Q. No.	<u>SECTION - A (10 X 1 = 10 Marks)</u> Answer <u>ALL</u> Questions.				
CO1	K1	1.	a) Stack b) Queue c) Array	on. d) List			
CO1	K2	2.	Which data structure is needed to convert infix notation notation? a) Stack b) Queue c) Array	to postfix d) List			
CO2	K1	3.	sorting algorithms is the fastest for sorting small a) Quick b) Shell c) Insertion	d) Heap			
CO2	K2	4.	Merge sort uses method to implement sorting. a) selection b) exchanging c) merging				
CO3	K1	5.	Dijkstra's Algorithm is the prime example for				
CO3	K2	6.	Which of the following algorithms is the best approach for Huffman codes? a) greedy algorithm b) exhaustive search c) divide and conquer algorithm d) brute force algorithm	_			
CO4	K1	7.	If a problem can be solved by combining optimal solution overlapping problems, the strategy is called a) Dynamic programming b) Greedy c) Divide and conquer d) Recursion				
CO4	K2	8.	When a top-down approach of dynamic programming is a problem, it usually a) Decreases both, the time complexity and the space comb) Decreases the time complexity and increases the space c) Increases the time complexity and decreases the space d) Increases both, the time complexity and the space comb	mplexity e complexity e complexity			
CO5	K1	9.	Backtracking algorithm is implemented by constructing a called as a) State-space tree b) State-chart tree c) Node tree d)				
CO5	K2	10.	Who coined the term 'backtracking'? a) Lehmer b) Donald c) Ross	d) Ford			

Course Outcome	Bloom's K-level	Q. No.	$\frac{\text{SECTION} - \text{B (5 X 5 = 25 Marks)}}{\text{Answer } \frac{\text{ALL}}{\text{Questions choosing either (a) or (b)}}$
CO1	K2	11a.	Illustrate the methods to calculate the Space and Time Complexity? (OR)
CO1	K2	11b.	Elaborate the procedure to perform Heap Sort.
CO2	K2	12a.	Describe the Abstract Data type of Graph. (OR)
CO2	K2	12b.	Demonstrate the Algorithm for Merge Sort.
CO3	КЗ	13a.	Describe Greedy technique with an example. (OR)
CO3	КЗ	13b.	Discover the steps in Dijkstra's Algorithm.
CO4	КЗ	14a.	Evaluate 0/1 knapsack problem using dynamic programming with an example. (OR)
CO4	КЗ	14b.	Illustrate an Optimal Binary Search Tree.
CO5	K4	15a.	Discuss the Steps to find Sum of Subsets. (OR)
CO5	K4	15b.	Analyze the advantages of Branch and Bound Methods.

Course Outcome	Bloom's K-level	Q. No	$\frac{\text{SECTION} - C \text{ (5 X 8 = 40 Marks)}}{\text{Answer } \frac{\text{ALL }}{\text{Questions choosing either (a) or (b)}}$
CO1	K4	16a.	Discover the various operations of Queue. (OR)
CO1	K4	16b.	Illustrate the steps to perform Binary Search Tree Operations.
CO2	K5	17a.	Describe the procedure to perform Binary Search? (OR)
CO2	K5	17b.	Discuss the steps to perform Quick Sort & Assess how it is effective from other type of Sorting.
CO3	K5	18a.	Examine knapsack problem with an example. (OR)
CO3	K5	18b.	Discuss about Prim's algorithm with an example.
CO4	K5	19a.	Identify All pairs shortest path (Floyd's Warshall's Algorithm) with suitable example. (OR)
CO4	K5	19b.	Discuss about Travelling Salesman Problem.
CO5	К6	20a.	Illustrate the Steps to Solve 8 Queens Problem. (OR)
CO5	К6	20b.	Describe the structure of Hamiltonian Circuits.