

Subject Code: PC502CM					AY:2024-25
	MATRUSRI ENGINEERING COLLEGE (An Autonomous Institution) 16-1-486, Saidabad, Hyderabad-500059 (Approved by AICTE, Affiliated to Osmania University)				
Department of Computer Engineering					
B.E. V-SEM Assignment -3					
Subject: DAA (PC502CM)			Marks: 10 M		
S.No.	Questions	Marks	BL	CO	
1	Solve the following 0/1 Knapsack problem using dynamic programming P= (10, 8, 12), W= (2, 3, 7), C=10, n=3.	2 M	L3	CO3	
2	Let n=4 and (a1,a2,a3,a4) Construct optimal binary search for (a1, a2, a3, a4) = (do, if, int, while), p(1 : 4) = (3,3,1,1) q(0 : 4)=(2,3,1,1,1)	1M	L3	CO3	
3	Consider three stages of a system with r1=0.3, r2=0.5, r3=0.2 and c1=30, c2=20, c3=30 Where the total cost of the system is C=80 and u1=2, u2=3, u3=2 find the reliability design.	1 M	L3	CO3	
4	Consider 4 elements $a_1 < a_2 < a_3 < a_4$ with $q_0=0.25$, $q_1=3/16$, $q_2=q_3=q_4=1/16$. $p_1=1/4$, $p_2=1/8$ $p_3=p_4=1/16$. (i) Construct the optimal binary search tree as a minimal cost tree. (ii) Construct the table of values Wij, Cij, Vij computed by the algorithm to compute the roots of optimal subtrees	1 M	L3	CO3	
5	state and explain FIFO branch and Bound and LIFO branch and bound?	1 M	L3	CO3	
6	Write an algorithm for how Eight Queen's problem can be solved using back tracking and explain with an example	1 M	L3	CO3	
7	Briefly explain Hamiltonian cycles using backtracking? Write an algorithm for it and explain with an example.	1 M	L3	CO3	
8	a) Briefly explain n-queen problem using Backtracking. Explain its applications. b) what is state space tree.explain with an example?	1 M	L3	CO3	
9	Draw the portion of state space tree generated by LCKNAP for the Knapsack instances: n=5, (P1,P2,.....P5) = (10, 15, 6, 8, 4) , (W1,W2,...W5) = (4, 6, 3, 4, 2) and M = 125	1 M	L3	CO3	