Name of Student: Ahhlad John

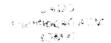
Roll No: 20MM 301



TKM COLLEGE OF ENGINEERING, KOLLAM-5 Department of Computer Applications III Semester MCA

Internal Assessment (Series Test-II) Feb 2022
Course with Code: 20MCA203 Design and Analysis of Algorithms

Qn. PART – A		imum Marks: 50		
No. Answer all questions	Marks	BL	CC	
Explain about control abstraction of backtracking technique	3	L1	3	
Apply backtracking technique to solve the following instance of Subset Sum problem where w={2,3,4,6,10} and d=12.	3	L2	3	
Explain the notion of decision tree method in lower bound complexity.	3	L1	3	
Explain control abstraction of branch and bound technique.	3	L1	3	
Differentiate class P and NP in complexity theory.	3	L1	4	
Compare deterministic and non deterministic algorithms.	3	L1	4	
Discuss about Polynomial time reduction in Np Hard problems	3	L1	4	
B Define the term network flow with an example.	3	L1	4	
Explain residual graph in network flow.	3	L1	4	
Explain bipartite graph and its matching with suitable diagram	3	L1	4	
PART – B MODULE-3 It a. Explain N Queens problem and analyse the solution based on	5	L2	3	
algorithm. OR				
b. Given a 3×3 board with 8 tiles (every tile has one number from 1 to 8) and one empty space. The objective is to place the numbers on tiles to match and find the final configuration using the empty space. (You can slide four adjacent (left, right, above, and below) tiles into the empty space). Initial Final Configuration Configuration	5	L2	3	
1 2 3 5 6 7 8 4 1 2 3 5 8 6 7 4				



ove that binary or any search has a lower bound complexity of $\Omega(\log n)$. OR The that any comparison based sorting has a lower bound complexity of $\Omega(n \log n)$. Or ove that Clique is NP complete. OR Prove that Vertex cover is NP Complete. Dain Max-Min cut theorem in ford fulkerson algorithm using stable example.	5	L2	
Frove that O or O	5 5	L2 L2	4
We that any comparison based sorting has a lower bound complexity of $\Omega(n \log n)$. Prove that Clique is $NP complete$. Prove that Vertex cover is $NP complete$.	5 5	L2 L2	4
Complexity of Ω(n logn). Prove that Clique is NP complete. OR Prove that Vertex cover is NP Complete.	5	L2	4
Orove that Clique is NP complete. OR Prove that Vertex cover is NP Complete.	5	L2	4
Orove that Clique is NP complete. OR Prove that Vertex cover is NP Complete.	5	L2	4
MODULE-4 plain Max-Min cut theorem in ford fulkerson algorithm using table example.			
plain Max-Min cut theorem in ford fulkerson algorithm using table example.			4
	i		
OR scribe the procedure and find maximum flow through the given work using ford fulkerson algorithm.			
0/8 0/9 B 0/2 flow capacity 0/3 0/4 C 0/5	5	L2	4
	0/8 0/2 ← capacity 0/3 0/5	0/8 0/2 ← capacity 0/3 0/5	0/8 0/2 ← capacity 0/3 0/5 5

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