PRN:		Course Code:	UCA301

Second Year S.Y.B.C.A.Sem(III) End Semester Examination Summer 2024

Design and Analysis of Algorithms

Day and Date: 29 MAY 2024, Wed Max Marks: **100**

Time: 10:30AM To 01.30PM Duration: **03** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CO
Q.1		**Attempt the following**			
	a)	Explain the term Algorithm in detail with example.	08	L1	CO1
	b)	Why Analysis of Algorithm is required.	08	L6	CO4
		OR			
	b)	Write Space complexity with example.	08	L2	CO4
Q.2		**Attempt the following**			
	a)	Describe Big Asymptotic Notations with example.	08	L1	CO3
	b)	Design an Algorithm to find given number is odd or even and calculate its time complexity.	08	L1	CO1
		OR			
	b)	State Time complexity with example.	08	L2	CO3
Q.3		**Attempt any two from the following**			
	a)	What is Greedy Algorithm explain with example.	08	L1	CO4
	b)	Define the term Data structure with diagram.	08	L4	CO4
	c)	Design Algorithm to accept three numbers from user and find out maximum among them.	08	L2	CO2
Q.4		**Attempt any two from the following**			
	a)	Solve Tower of Hanoi problem with Recursion.	08	L1	CO2
	b)	Explain any Sorting Technique.	08	L6	CO4
	c)	Design Algorithm to find out even or odd number from given numbers and find out its time complexity.	08	L6	CO4
Q.5		**Attempt any Two of the following**			
	a)	Explain Coin change problem in detail.	09	L1	CO1
	b)	Write 1D Array in Data Structure with example.	09	L6	CO2
	c)	Explain Backtracking with N-Queen problem where N=4.	09	L1	CO4
Q.6		**Attempt any Two of the following**			
	a)	Define Dynamic programming with example.	09	L6	CO3
	b)	Differentiate between Iteration and Recursion.	09	L4	CO4
	c)	Design Algorithm to find out factorial of given number and calculate its time complexity.	09	L4	CO2

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