

Program: F.Y.B.Sc CS **Semester:** II **Program Code:** UGCS02
Course: Design and Analysis of Algorithms **Course Code:** NUCS201
Duration: 1 Hour **Examination Pattern:** NEP-Autonomous - External **Max. Marks:** 30

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat diagrams wherever necessary.

Examination:
REGULAR

Q. 1	Attempt any TWO of the following.	[10]	Course Outcome	Knowledge Level
(a)	How do you analyze the running time of an algorithm?		CO1	L4
(b)	Define an algorithm and explain its key characteristics.		CO3	L2
(c)	Compare Recursion and Iteration		CO1	L4
(d)	Define a data structure and explain its importance in computer science.		CO2	L2
Q. 2	Attempt any TWO of the following.	[10]	Course Outcome	Knowledge Level
(a)	Discuss the advantages and disadvantages of Linear Search		CO1	L5
(b)	Compare Linear Search and Binary Search		CO1	L4
(c)	Describe the Brute Force Method for string pattern matching.		CO2	L2
(d)	Define the Divide-and-Conquer approach and explain its concept.		CO3	L2
Q. 3	Attempt any TWO of the following.	[10]	Course Outcome	Knowledge Level
(a)	What are the types of complexity in algorithm analysis?		CO1	L1
(b)	Define the term "Rate of Growth" and explain how it is used in analyzing algorithms.		CO1	L2
(c)	Describe Dynamic Programming and explain its key characteristics.		CO3	L2
(d)	Explain the concept of Pattern Matching in strings and its importance.		CO2	L2

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