Q.P. Code: 16CS521 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations Feb-2021

DESIGN AND ANALYSIS OF ALGORITHMS

(Common to CSE & CSIT)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	What is asymptotic notation? Explain different types of notations with examples?	6M
	b	Write the rules of Pseudo code for Expressing Algorithms.	6M

OR

2	a	Briefly explain Graph traversals with examples.	6M
	b	Write about Union and Find algorithms with Example and find Time complexity.	6M

UNIT-II

3	a	Write about Quick sort algorithm with example & time complexity.	6M
	b	Explain in detail about the Stressen's matrix multiplication with time complexity.	6M

OR

4	a	Explain the general Greedy method with an algorithm?	6M
	b	Explain the general divide-and-conquer method with an algorithm?	6M

UNIT-III

5	a	Explain 0/1 knapsack problem by using backtracking with an example?	6M
	b	Explain travelling sales man problem with an example by using dynamic programming.	6M

OR

6	a	Describe in detail graph coloring using back tracking?	6M
	b	Explain any one application back tracking with example?	6M

UNIT-IV

7	a	Explain the properties of LC-search?	6M
	b	Explain control abstraction of LC-branch and bound.	6M

OR

8	a	Explain any one application of branch and bound.	6M
	b	Apply the branch-and- bound technique in solving the travelling salesman problem.	6M

UNIT-V

9	a	Explain the class of P and NP with example.	6M
	b	State and explain cook's theorem.	6M

OR

10	a	What is halting problem explain with an example.	6M
	b	Briefly explain the classes NP-hard and NP-complete.	6M

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