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

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations November-2020

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		What is Asymptotic notation? Explain different types of notations with examples.	**12M**
		OR	
2	**a**	Write the rules of Pseudo code for Expressing Algorithms.	**6M**
	b	Describe about the performance analysis in detail with Example.	**6M**

UNIT-II

3	**a**	Write about Quick sort algorithm with example & time complexity.	**6M**
	b	Explain the general Greedy method with an algorithm?	**6M**
		OR	
4	**a**	What is spanning tree? Explain the Kruskals algorithm with an example.	**6M**
	b	Write about Merge sort algorithm with example & time complexity.	**6M**

UNIT-III

5	**a**	Explain travelling sales man problem with an example by using dynamic programming.	**6M**
	b	Briefly explain the optimal binary search trees with example.	**6M**
		OR	
6	**a**	Describe in detail 8-queens problem using back tracking.	**6M**
	b	Describe in detail Hamiltonian cycles using back tracking.	**6M**

UNIT-IV

7	**a**	Explain the general method of branch and bound.	**6M**
	b	Briefly explain the LC Brach and bound solution with example.	**6M**
		OR	
8	**a**	Explain the method of reduction to solve TSP problem using branch and bound.	**6M**
	b	Apply the branch-and- bound technique in solving the travelling salesman problem.	**6M**

UNIT-V

9	**a**	Differentiate between NP- complete and NP-hard problems.	**6M**
	b	Distinguish between deterministic and non-deterministic algorithms.	**6M**
		OR	
10	**a**	Explain the satisifiability problem and write the algorithm.	**6M**
	b	What is halting problem explain with an example?	**6M**

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