R16

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations August-2022
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	Briefly explain the time complexity and space complexity estimation with example.	L1	6M
	b	What do you mean by algorithm? List some of the properties of it.	L1	6M

OR

2	a	Briefly explain Binary tree traversals with examples.	L1	6M
	b	Briefly explain the Connected components and Spanning trees with example.	L1	6M

UNIT-II

3	Write about Quick sort algorithm with example &derive time complexity.	L2	12M

OR

4	a	Explain the general Greedy method with an algorithm.	L1	6M
	b	Explain the general divide-and-conquer method with an algorithm.	L1	6M

UNIT-III

5	Explain all pairs shortest path problem with an example by using dynamic programming.	L1	12M

OR

6	Describe in detail graph coloring using back tracking.	L2	12M

UNIT-IV

7	Apply branch and bound to 0/1 knapsack problem and elaborate it.	L3	12M

OR

8	State 0/1 knapsack problem and design an algorithm of LC Branch and Bound and find the solution for the knapsack instance with any example.	L4	12M

UNIT-V

9	a	Distinguish between deterministic and non-deterministic algorithms.	L4	6M
	b	Differentiate between NP- complete and NP-hard problems.	L4	6M

OR

10	a	What is halting problem explain with an example?	L1	6M
	b	Explain the class of P and NP with example.	L1	6M

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