D Y PATIL
RAMRAO ADIK INSTITUTE OF TECHNOLOGY
NAVI MUMBAI

Department of Computer Engineering

Academic Year: 2019-20 (EVEN)

ASSIGNMENT NO:1

Subject : Analysis Of Algorithm Lab **Semester:** IV

Course Outcome	**CO 1**	**CO 2**		**CO 3**		
Question No.	1	2 a	2 b	3 a	3b	Total
Marks Obtained						
Marks Allotted	04	05	05	10	06	30

Name:

Batch:

Roll No. :

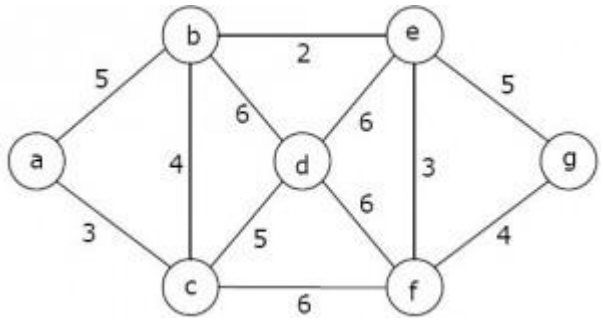
Signature of Faculty:

Department of Computer Engineering

Academic Year: 2019-20 (EVEN)

ASSIGNMENT NO. 1

Subject : Analysis of Algorithm Lab **Sem :** IV

Question No.		Question	Marks	CO	BT
1.		Explain recursion tree method and solve the following recurrence relation using recursion tree method. $T(n) = T(n-1) + n$	4M	CO1	BT3
2.	a.	Derive the complexity of quick sort algorithm.	5M	CO2	BT4
	b.	Describe how Divide and Conquer strategy is used in Binary Search with example. Derive its complexity.	5M	CO2	BT4
3.	a.	Describe Job sequencing with deadlines concept and apply this to find feasible solutions for the following example. Let n=7, (p1,p2,p3,p4,p5,p6,p7) = (3, 5, 20, 18, 1, 6, 30) and (d1, d2, d3, d4, d5,d6, d7) = (1,3,4,3,2,1,2)	10M	CO3	BT3
	b.	Find the minimum spanning tree of the given graph using Prim's and Kruskal's Algorithm. 	6M	CO3	BT3

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Course Outcomes (CO) Students' will be able to :

CO1 Analyze the complexities of various problems in different domains.

CO2 Prove the correctness and analyze the running time of the basic algorithms for those classic problems in various domains using divide and conquer strategy.

CO3 **Create and apply the efficient algorithms for the effective problem solving with the help of different strategies like greedy method.**

CO4 **Apply dynamic programming strategy to solve different problems effectively.**

CO5 **Create and apply backtracking, branch and bound and string matching techniques to deal with some hard problems.**

CO6 **Understand to prove that a certain problem is NP-Complete.**

Bloom's Taxonomy

BT1- Remember	BT2- Understand	BT3- Apply	BT4- Analyze	BT5- Evaluate	BT6- Create

Subject In-charge **DQA Memeber**