Code No: RT32054 **R13** SET - 1

III B. Tech II Semester Supplementary Examinations, November/December - 2016

DESIGN AND ANALYSIS OF ALGORITHMS

(Common to CSE and IT)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

*****

PART –A

1	a)	What are the characteristics of an algorithm?	[3M]
	b)	Define Divide & Conquer Strategy.	[3M]
	c)	Explain about single source shortest path problem.	[4M]
	d)	Differentiate between greedy method and dynamic programming.	[4M]
	e)	Define graph coloring	[4M]
	f)	Explain about Branch and Bound method.	[4M]

PART –B

2	a)	Compare time complexity with space complexity?	[8M]
	b)	Write the pseudo code for expressing algorithms.	[8M]
3	a)	Write and explain recursive binary search algorithm.	[8M]
	b)	Derive the time complexity of merge sort.	[8M]
4	a)	Write with an example of Prim's algorithm.	[8M]
	b)	Write a greedy algorithm for sequencing unit time jobs with dead lines and profits.	[8M]
5	a)	Explain Optimal Binary Search tree.	[8M]
	b)	Solve the following instance of 0/1 Knapsack problem using Dynamic programming n = 3; (W1, W2, W3) = (3, 5, 7); (P1, P2, P3) = (3, 7, 12); M = 4.	[8M]
6	a)	Discuss Sum of subset problem.	[8M]
	b)	Discuss about n-queen problem.	[8M]
7	a)	Explain FIFO Branch and Bound solution.	[8M]
	b)	Explain 0/1 Knapsack problem with respect to branch and bound method.	[8M]

*****