## CULLADAT TECHNOLOCICAL UNIVERSITY

<b>BE - SEMESTER-V- EXAMINATION – SUMMER 2016</b>			
	Subje	ect Code: 150703 Date: 09/05/201	16
	Subject Name: Design and Analysis of AlgorithmsTime: 02:30 PM to 05:00 PMTotal Marks:Instructions:Total Marks		0
		<ol> <li>Attempt all questions.</li> <li>Make suitable assumptions wherever necessary.</li> <li>Figures to the right indicate full marks.</li> </ol>	
Q.1	(a) (b)	Why do we use asymptotic notations in the study of algorithms? Briefly describe the commonly used asymptotic notations.	07 07
	(0)	Method. Also give its Time Complexity.	07
Q.2	2 (a)	Explain in brief characteristics of greedy algorithms. Compare Greedy Method with Dynamic Programming Method.	07
	<b>(b)</b>	Explain bubble sort algorithm with suitable example.	07
		OR	
	<b>(b)</b>	Explain Prim's algorithm with example for construction of MST.	07
Q.3	6 (a) (b)	Explain Kruskal's algorithm with example for construction of MST. Define an amortized analysis with any one of its techniques.	07 07
		OR	
Q.3	6 (a) (b)	Explain quick sort algorithm with suitable example. Explain insertion sort algorithm with suitable example.	07 07
<b>Q.</b> 4	(a) (b)	Write a brief note on NP-completeness and the classes-P, NP and NPC. Explain the heap sort in detail. Give its complexity.	07 07
		OR	
Q.4	(a)	Explain Backtracking Method. What is N-Queens Problem? Give solution of 4- Queens Problem using Backtracking Method.	07
	<b>(b)</b>	Explain finite automata algorithm for string matching with suitable example.	07
Q.5	5 (a) (b)	Explain Rabin-Karp method for string matching and also give the algorithm. Differentiate BFS and DFS.	07 07
		OR	
Q.5	5 (a)	Explain Selection Sort Algorithm and give its best case, worst case and average case complexity with suitable example.	07
	(b)	Explain Strasson's algorithm for matrix multiplication with suitable example.	07

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