Subject Code: 2150703   **Date: 23/09/2016**
Subject Name: ADA   **Sem: 5TH**
Time: 10:00 TO 10:50   **Total Marks: 20**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

QUE.1	**(A)**	Justify: When data is already in sorted forms Quick Sort takes maximum time.	**3**
	(B)	Give the time complexity for following Algorithm : (1) Heap Sort (2) Insertion Sort (3) Binary Search.	**3**
QUE.2	**(A)**	Solve following Recurrence Equations : (1) $T(n) = 0.5T(n/2) + n$	**3**
		(2) $T(n) = 9T(n/3) + n^3$	
	(B)	Justify Counting Sort is Stable Sort with Example.	**4**

OR

	(B)	How two large integers are multiplied by Divide and Conquer.	**4**
QUE.3	**(A)**	Explain Prim's Algorithm with an Example.	**3**
	(B)	Explain DFS with an Example.	**4**

OR

	(A)	Define: (1) Articulation Point (2) Bi-Connected Graph (3) Topological Sorting	**3**
	(B)	What is need of Huffman Code? Generate Huffman Tree for	**4**

A	B	C	D	E
24	12	10	8	8

******************************* ALL THE BEST *******************************