Minor Test II – October 2012

**MCA301: Design and Analysis of Algorithms**

# Time : 45min Max Marks : 15

1. Assume that in quick sort the procedure PARTITION is stable.
   1. Give a best case input with at least 15 keys and then generalize it
   2. Give a worst case input with at least 15 keys and then generalize it.

when the middle element is always chosen as the pivot.

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1. Compute the longest prefix that matches its suffix for the following values of k and hence compute their fail links without using the algorithm for the pattern: aaabaaabaaabcde?
   1. Fail[6] i.e. k =6
   2. Fail[9] i.e. k =9
   3. Fail[11] i.e. k =11
   4. Fail[4] i.e. k =4

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1. Give an efficient algorithm to sort n integers in the range [1..n^100]. Give the run time complexity of your algorithm?

3

1. Compute all the fail links for the pattern: abababe

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