**HOME WORK**

**Homework based on Lecture 3.1**

1. Which of the following sorting techniques is most efficient if the range of input data is not significantly greater than a number of elements to be sorted?  
   a) selection sort  
   b) bubble sort  
   **c) counting sort**   
   d) insertion sort
2. What is the auxiliary space requirement of counting sort?  
   a) O(1)  
   b) O(n)  
   c) O(log n)  
   **d) O(n+k) k=range of input**
3. Given an array where numbers are in range from 1 to n6, which sorting algorithm can be used to sort these number in linear time?  
   (A) Not possible to sort in linear time  
   **(B) Radix Sort**(C) Counting Sort  
   (D) Quick Sort

**Homework based on Lecture 3.2**

1. Which of the following non-comparison sort can also be considered as a comparison-based sort?  
   a) counting sort  
   b) MSD radix sot  
   **c) bucket sort**  
   d) pigeonhole sort
2. Which of the following don’t affect the time complexity of bucket sort?  
   a) algorithm implemented for sorting individual buckets  
   b) number of buckets used  
   c) distribution of input  
   **d) input values**
3. Worst case time complexity of bucket sort (k = number of buckets) is?  
   a) O(n + k)  
   b) O(n.k)  
   **c) O(n2)**  
   d) O(n log n)