UCS 501 Quiz #2 **Roll No.** **Group No.**

1. The worst case occurs in linear search when

(a) Item is somewhere in the middle of the array
(b) Item is not in the array at all
(c) Item is the last element in the array
(d) Item is the last element in the array or is not there at all

2. For the quick sort algorithm, what is the time complexity of the best/worst case?

(a) best case: $O(n)$ worst case: $O(n*n)$
(b) best case: $O(n)$ worst case: $O(n*\log(n))$
(c) best case: $O(n*\log(n))$ worst case: $O(n*\log(n))$
(d) best case: $O(n*\log(n))$ worst case: $O(n*n)$

3. In divide and conquer the given problem is always divided to equal sized smaller sub problems identical to original problem. (TRUE / FALSE)

4. Which of the following problems does not have the combine step:

(a) binary search, merge sort (b) binary search, quick sort (c) merge sort, quick sort (d) All of these

5. Given the following set of duration and deadlines times:

i	1	2	3	4	5	6	7
ti	4	3	3	2	3	5	6
di	4	7	19	12	10	13	14

Find the minimum lateness using Greedy method which gives the efficient results?

(a) 12 (b) 14 (c) 20 (d) None of these

6. What will be the complexity of the following code:

```
for (i =1; i<n; i++)
for (j =1; i<n; i++)
for(k =1; k<n; k++)
{ i = j;}
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(a) $O(n^3)$ (b) $O(n^2)$ (c) O(n) (d) None of these

7. Given a set of n numbers. What is the total number of subsets for producing a given sum?

(a) n! (b) (n^2) (c) 2^n (d) None of these

8. In a simple path all edges and vertices are distinct while in a simple cycle, all vertices and edges may not be distinct. (TRUE/ FALSE)

9. In strassen's Multiplication Algorithm the T(n) is

a) $7T(n) + bn^2$ b) $7T(n/2) + bn^2$ c) $8T(n/2) + bn^2$ d) $7T(n/2) + bn$

10. Each step is chosen such that it is the best alternative among all feasible choices that are available. The choice of a step once made cannot be changed in subsequent steps:

(a) Divide and conquer (b)Greedy Programming
(c) Dynamic Programming (d) Branch and bound