**Class Test 01: CSI 207- Algorithms, Fall 2019**

**Total Marks: 20, Time: 25 minutes**

Name: ID:

1. Derive the exact time/cost equation for the following algorithms. [10]

Algorithm1(m, n):

**for**(i =0; i<m; i=i+2)

**for**(j=0; j<50; j++)

**for**(k =0; k<n; k=2\*k)

System.***out***.println(i\*j\*k);

1. Write the pseudo-code of any algorithm that will take 2 parameters n & m, runs in time O(n + mlogm). In other words the time equation of the algorithm should be, T(n) = an +bm*logm*. [10]

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1. Derive the exact time/cost equation for the following algorithm. [10]

Algorithm3(n):

**for**(i =0; i<n; i=i+2)

**for**(j=0; j<2\*i; j++)

System.***out***.println(i\*j)

1. Determine and show if the followings are true/false. Find out c1, c2 and n0 if it is true. [10]

(n+a)b = (nb)