

## ASSIGNMENT DAY - 1

1.) Find the time complexity for the following scenarios

a.) for(i=1;i<=n;i++)      =>       $n - 1 + 1 = O(n)$

for(j=i;i<=n;j++)      =>       $n - 1 * n$

printf("Hi");      =>       $n - 1 * n * 1$

⇒  $n + (n - 1 * n) + (n - 1 * n) => n + 2(n-1*n) => \underline{O(n^2)}$

b.) for(i=1;i<=n;i\*=3)      =>  $O(\log n)$

for(j=1;i<=n;j++)      =>  $\log n * n$

printf("Hello");      =>  $\log n * (n-1) * 1$

⇒  $\log n + \log n * n + \log n * (n - 1) => \underline{O(\log n^2)}$