

DAA – ASSIGNMENT

1) Write an algorithm for Fibonacci series using Recursion. Design the recurrence relation and solve it.

2) Solve the following

i) $X(n) = X(n-1) + 5$, $\forall n > 1$, $X(1) = 0$

ii) $X(n) = 3X(n-1)$, $\forall n > 1$, $X(1) = 4$

iii) $X(n) = X(n-1) + n$, $\forall n > 0$, $X(0) = 0$

iv) $X(n) = X(n/2) + n$, $\forall n > 1$, $X(1) = 1$ (Solve for $n = 2^k$)

v) $X(n) = X(n/3) + 1$, $\forall n > 1$, $X(1) = 1$ (Solve for $n = 3^k$)

3) Write an algorithm for Selection sort and Bubble sort. Analyze its time complexity.