

COM Design and Analysis of Algorithms Assignment-2

Due: Feb/1

1. Solve using Master theorem. Justify if Master theorem is not applicable.

(a) $T(n) = 16T(\frac{n}{4}) + n^2$

(b) $T(n) = 3T(\frac{n}{2}) + n \log \log n$

(c) $T(n) = 4T(\frac{n}{2}) + n^3 \log n$

2. Solve:

(a) $T(n) = 2T(3n) + n$

(b) $T(n) = T(\frac{n}{2} + 1) + 1$. Present big-oh analysis. Assume suitable base values.

(c) $\sqrt{n}.T(\sqrt{n}) + 10.n$. Assume suitable base values.

(d) $T(n) = T(n - 1).T(n - 2)$, $T(1) = 1$, $T(2) = 2$.