Assignment -4 Mane - Wibha fani Rellmo-45 Section - CE (computer Engineering) University Rellno- 3017 395 Tuborial-04 Dues1: T(n) = 3T(n/2) + n2 a=3 b=2 $f(n)=n^2$ Czlogo z logo z nlogo n logo / L fins :: |TD) 2 B(mg) Quest: To = 47 (n/2) + n2 0 = 4 b = 2 0 = 4 0 = $n^{\log_{9}9} = f(n)$ T(n) = 0 (n2 lagn) 6 ms 3: T(n) = T(n/2) + 2" 0=1 b=2 $f(n) = 2^n$ nogo = n lors 2 n° = 1 1 n 696 4 2 ? T(n) = 0 (27)

Quest Ton) = 2 + Ton/2/+n' : . a is a function -> Mastel's theorem is not possible. Quess: Trn = 16 T/n/4) +n a=18 b=4 fm=n nlogo = nlogy = n2 .. n (109) 9 > n $T(n) = O(n^2)$ dust: T(n) = 2 T(n),)+n logn. a = 2 b = 2 f(n) z = log =n 6909 = n 6922 = n. n logn > n (T(n) = O(nlogn) Quest: T(n) = 2 T(n/2) + n/logn Q=2, b=2 f(n)=n/lognnlogpa 2 nlogit 2 n nigo L fins T(n) = o(n/tegn) Dues 8: T(n) = 2 T(n/4) + no.51 a= 2 b= 4 f(n) = nois1 n 6909 = n6142 = n0.57 niesia 2 thi :. T(1), O(n0.51)

Ques9: T(n) = 0.5 T(n/2) +1/n " aL1 .. Masters theorem not applicably Questo: To, = 18 T(n/4) + n! a=16 b=4, fm = n! nlogba = nlogy 16 = n2 00 M2 Ln! T(n) = O(n!)Ques 11: Ton) = 4 T(n/2) + logn $C(z + 4, b = 2, f(n) = \log n$ $n \log_b q = n \log_2 4 = n$... n log 9 > f(n) ... T(m) = 0 (m2) Quesiz: Tin) = Sqrt(n) t(n/2) + logy : a is not constant ... reaster's theorem not applicable. Ques 13: T(n) = 37 (n/2) +n. a = 3 b = 2 f(n) = n $n^{\log_{10}9} = n^{\log_{2}3} = n^{1.58}$ n logo > fin ... T(n) = 0 (m1.58) Quest4: T(n) = 4T(n/2) +cm a = 4 b = 2, f(n) = cnnlog 69 = nlog 24 2 m2

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.. nogo > fin
  :. T(n)= 0 (n2)
Queste: Tim = 31 (m/4) + n logn
      a=3, b=4, fn, n logn
        n6959 , n6943 , n6.79
     · nlego L fm
      : T(n) = 0 (n logn)
duult Tm) = 3 Tm/3) + n/2
    a = 3, b = 3, f(n) = n/L
  nlogo = nlog3 = n
  .. n 69 69 > f(n)
  .. Ton) = 0 (m)
Ques 18: T(n) = 6 T(n/3) + nº logn
      a 26 b= 3 fing= nº logn
     nlogza = rlogi = n1.63
       nlogo 2 fm) => Tm) = 0(n2 logn)
 Ques 19: T(m) = 4T(m/2) + n/logn
        a=4 b=2 f(n) 2 n/209n
     n 692 2 neg 4 2 nh
       n 109,9 > f(n)
      ... T(n) 20 (n')
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Bueszo: $T(n) = 64 T(n/8) - n 2 \log n$ master's Theorem is not approach as f(n) is not increasing function

Bueszo: $T(n) = 4 T(n/3) + n^2$ $0 = 4 \quad b = 3 \quad f(n) = n^2$ $n \log_8 a = n \log_3 a = n \log_8 a = n$

Duesaa: Ton) = Ton/2) + n(2-cosn)

- Master's Theorem is mot applied

... regularity. Condition is isolated is case 3.