Tutorical - 04

Quest. $TCM = 3TCM2) + N^2$ $\Rightarrow a = 3$, b = 2, $fcm) = N^2$ $N^2 = N^2$ $N^2 = N^2$ $N^2 = N^2$ $N^2 = N^2$

Ques.2. $TM) = 4T(W_2) + W^2$ $\Rightarrow a = 4, b = 2, f(w_1) = W^2$ $\Rightarrow n \log_2 a = n \log_2 2 = n \log_2 2^2$ $\Rightarrow e = W^2$ $\Rightarrow n \log_2 a = f(w_1)$ $\Rightarrow r(w_1) = 0 \text{ cu}^2 \log_2 n$

Ques.3. $T(M) = T(M) + 2^M$ $\Rightarrow \alpha = 1, b = 2, f(M) = 2^M$ $\gamma \log_b \alpha = \gamma \log_2 1 = \gamma^0 = 1$ $\gamma \log_b \alpha < 2^M$ $\therefore T(M) = \theta(2^M)$

Ques.4. TW=24+TW2)+ver ∴ a & a function. → Master's theorem & not possible.

Ques.s. TUN)=16TCN/4)+N $\rightarrow a=16$, b=4, fun)=N $N\log_{0}a=N\log_{4}46=N\log_{4}4^{2}=N^{2}$ $\therefore N\log_{0}a \ge fun)$ $\therefore TUN)=0 CM^{2}$

```
Apply (SWU TS = (MI) - JANA
   → a=2, b=2, tun= dlogn
        logba = Nlog22 = N
           tons > wages
        : Tun = o unlogn)
Ques.7. TW)= 2TW(2)+N/LOGN

→ a=2, b=2, fw)=N/LOGN
         Magoa = Mlog22 = M
            : Wholpor < tons
           : TUM) = OCM)
 Que. 8. TW) = 27 CW4) + N° 151

→ a=2, b=4, fun) = N° 151
         Nrogpa = Nrogus - No.21
           ". nogbaz fan
         (12.0M) = 0 (Mo. 21)
 PULS. P. - CONT CONT. P. SUP
      .. Master's theorem not applicable.
 QUESILO. TUN)=16TCHYY)+NI
     → a = 16, b = 4, +cm) = Ni
      Nogea = Nogy16 = Nogy45 = N5
        : No SNI Go Wodpa < ton)
         : Ton = D cmi)
 Ques.11. TUN = 4TUN2) + LOGH
    → a=4,b=2, fm)= wgn
       Nobra = Nobra = Ng
        .. whopastus
        ·: TUM) = DUM2)
 ques. 12. TUN) = sque un) ICN/2) + Logy
```

que.12. Ton) = egret un) ICN/2) + logn : a & not constant : master's theorem not applicable.

```
que.13 TM) = STMD+4
   → a=3,b=2,fm)=N
Nlgba = Nlg23 = N1.58
           Modra >tm)
           :. TUM) = 0 (M.SQ)
 QUOS.14. TW) = ST CM/3) +IM
    → a = 3, b = 3, fun) = In
Napa = Nas = N
        · nlogba > fem)
      > TW)= PW)
 Ques.15. TUN) = 4TUM/2) + CM
    → a=4, b=2, fm)=c*n
   NLOGED = NLOG24 = NLOG222 = 17
          " nigoa sten
        .. TOM)=0002)
 QUES.16. TUN) = 3TUN/4) + N LOPN
    -> a=3, b=4, fm)=nlogh
       nugba = nugga3 = no.79
         ··· nogba Lfon)
        .. TUN = DUNCOgú)
Quair. TUN=3TUN3)+4/2
  > a=3, b=3, fun)=1/2
     Nigson = Niggs = N
       " nogsa you)
        (m) = 0m) ..
Ques. 18. TUN = 6T CN/3)+12 logn
 -> a=6, b=3, fan=n2logn
     Nhogoa = Nhogo 6 = N1.63
        negoa <fan) => ICN= = Ochelogn)
Ques. 19. TU)=4TCM/2)+MLQqM
  ~ a=4, b=2, fcm1 = n/ wgn
n wgo a= n wg2 4= 47600 112
       nigoaz fan)
     > TOW) = O(UP)
```

lle

Aus so. Ton = 64 TM/0)-n2 logn

> Nester's theorem is not applied as fens is not increasing function.

Ques 21. TUN) = 7T CMB) + 1/2

 $\rightarrow \alpha = 7$, b = 8, $f(x) = N^2$ N(0960 = N(0937)

= N1.3

: Noto o Ten)

 \Rightarrow TCM) = θ CM²)

Ques 22. TOM)= TOM/2)+ N(2-100M)

Master's theorem & not applied

: regularity randition à volotedis cases.