Rolling. - parts Nagada Rolling. - OBI Section - AI and DS

Tutorial-04

Quest. TW = 3T W(2) th? $\Rightarrow \alpha = 3, b = 2, f(m) = n^2$ $n^{6}gb^{\alpha} = n^{6}g^{2}s$ $n^{6}gb^{\alpha} < f(m)$ $\frac{1}{2}m = \frac{1}{2}m = \frac{1}{$

Ques.2. TW)=4T(W2)+N2

a = 4, b = 2, $f(m) = N^2$ $N \log_b a = N \log_2 4 = N \log_2 2^2$ $= N^2$

> :. nlogoa = fen) :. Tu) = 6 cu2 logn)

Ques.3. $TW = TW/2 + 2^{N}$ $\rightarrow \alpha = 1$, b = 2, $fw = 2^{N}$

a = 1, b = 2, $f(n) = 2^n$ $n \log_b a = n \log_2 1 = n^2 = 1$ $n \log_b a < 2^n$

:. TW) = O(24)

Qua.4. TW=24+TW/2)+1/2

.. a % a function.

→ Master's theorem & not possible.

QUES. TWI= 16T CN/4)+N

 $\rightarrow a = 16$, b = 4, f(m) = N $N\log_{10} a = N\log_{10} 416 = N\log_{10} 4^2 = N^2$

.. nlogoa & tun)

: TCM) = 0 CM2)

Quas. TW)=2TW2) +NOgn $\rightarrow \alpha = 2, b = 2, + (m) = N \log n$ 6960 = N6922 = N tons > Nighor : Tun = O unlogn) $\frac{\text{QULS.7.}}{\Rightarrow} \alpha = 2, b = 2, f cm) = N | \text{UGN}$ Magoa = Mlog22 = M : Wholpa < tan) 1. TUM) = OCM) Que. B. $TW = 2TWY + N^{0.51}$ $\Rightarrow \alpha = 2, b = 4, fw = N^{0.51}$ Nrolpy = Nrolds - No.21 ". Wogbaz ton ·· TUM) = O (MO. SI) QUES.9. TUN) = 0.27 CM/2) + /M ... Master's theorem not applicable QUESILO. TUN)=16T(TYY)+NI $\rightarrow a = 16$, b = 4, $\pm (m) = m$ Nogo = Nogy16 = Nogy42 = N2 : No < NI go Modoa < ton) ·: TUN = D CMI) Quesil. TWD=4TW2)+ LOGH -> a=4,b=2, fm)= logn Nhogoa = Ntopz4=NZ "Noto a >tm) · · TUM) = DUMZ) ques.12. TUN) = sque un) ICN/2) + logy fuctarion son is not : Master's theorem not applicable.

QUO.13 TM) = STUMP +M $\rightarrow \alpha = 3, b = 2, fun) = N$ $N\log b\alpha = N\log 2 = NISB$ Modra > tam) · · TM) = O (M·SQ) QUESTUM. TWO = ST CM/S) +IM $\rightarrow \alpha = 3, b = 3, fm) = IN$.. nlogba > fem) (M0 = (M) € Ques.15, TW) = 4TW/2) + CM $\rightarrow \alpha = 4, b = 2, f(M) = c \times N$ Nlogba = Nlog24 = Nlog222 = 17 ·: Mlgsa > fem) ... TCM)=0CM2) QUELLE TUN) = 3TUN/Y) + N LOPN -> a=3, b=4, fmi=nlogh nugba = nugg3 = no.79 ... nugba Zfan) · TUN = OCUCOSIN) Quesi7. TCM)=3TCM(3)+4/2 $\rightarrow a=3, b=3, fm = 1/2$ Nogba = Nogs3 = N "nogoa you) (m) = 0 (m). QUES. 1B. TUN) = 6T CH/S)+12 LOgn -> a=6, b=3, fcm=n2logn NLOGER = NLOGE = N1.63 niosa < fun => Tan= = along Ques. 19. TW)=4TW/2)+N/LOgN -> a=4, b=2, fcm1 = n/ logl n logo a= nlog 2 4= 10 50 12 nigoaz fen) > TON) = O(UP)

Ques. 20. TUN = 64 TUN(8) - N2 LOGN > reposter's theorem is not applied as fen is not increasing function. Ques 21. TUN = 7T CMB) + 1/2 $\rightarrow \alpha = 1$, p = 3, $tw) = N_5$ Nogba = Nog37 :. Nogoa Z fou) \Rightarrow TCM) = θ CM²) Ques 22. TOM>= TOM/2)+N(2-LOSH) -> Master's theorem is not applied : segularity condition is isolated is case s.