	Tutoual Sheet-4 . Date: 1
1-	$T(n) = 3T(n/3) + n^2$
	$\frac{1(n)^2 + 3 \cdot (n)^2}{2} = n^2$
	a=3 b=2 f(n)=n2 · a d b ave constant d f(n) is a trefunction.
	· Master's theorem is applicable
- 1	$c = \log a = \log 3 = 1.88$
	n = n'58 which is n2 > n'58
	case 3 is applied here
	$\int \int T(n) = O(n^2)$
	- Harman Control of the Charles of the Charles
Q -	$T(n) = 4T(n/4) + n^2$
7	$a = 4$ $b = 1$ $f(n) = n^{2}$
	- a 4 b our const. & f (n) is a positive function.
	· Marter's theorem is applicable
	$c = \log a = \log 4 = \log 2^2 = 2 \log 2 = 2$
	$n^c = n^2$ $n^c = f(n)$
	T(n) = a(n² lug n)
	T(n) = a(n² lug n)
	market and a later than the commence of a si
3-	$T(n) = T(n/1) + 2^n$
	$a = 1 \qquad b = \lambda \qquad (cn) = 2^n$
	- ad b are constitution is a tre function M.T. applica
	$C = log \ a = log \ 1 = 0 = $
	$\langle (n) \rangle n^{c}$
A Salaya	(ase 3 is applied here
na vista de la	(7(n) = 0(2 ⁿ)).
	N-m/2 - 7
4-	$T(n) = \lambda^n T(n/\lambda) + n''$
	$a = x^n b = 2 \phi(n) = n^n$
	· a is not constant, its value depends on n
	Mas lais theorem is not applicable here.

Date: / / T(n) = 16 T(n/4) + na=16, b=4 f(n)=ni a & b are const and f(n) is a +ve function $c = \log a = \log 16 = 2\log 4 = 2$ b $f(n) = \log n$ nc = n2 ·· case 1 is applied here T(n) = 0(n2) $T(n) = \chi + (n/2) + n \log n$ a=2, b=2, $f(n)=n\log n$ i. a & b are constant— and f(n) is a +ve function?

i. $c=\log a=\log 2=1$ $f(n)>n^c$ i. care 3 is applied. T (n) = O(n logn) T(n) = 2+ (n/2) + n/logn a = 2, b = d, $f(n) = n/\log n$ a = 2, b = d, $f(n) = n/\log n$ $c = \log a = \log 2 = 1$; $n^c = n' = n$ · non-polynomial difference b/w f(n) and no · Moster's theorem is not applicable. $T(n) = 2 T(n/4) + n^{\circ.5}$ a = 2, b = 4 C = 100 C

9-	T(n) = 0.5 T(n/x) + 1/n				
	a = 0.5, $b = 2$, $f(n) = /n$				
	As a <1 master's theorem is not-applicable.				
10-	$T(n) = 16T(n/4) + n_0$				
	a = 16, $b = 4$, $f(n) = n$				
-	a & b are constant + for) is a tre function.				
	· Master's theorem applicable.				
	$c = log a = log 16 = 2 log 4 = 3$; $n = n^2$				
	and is applied here.				
	$ \tau(n) = O(n!) $				
11-	T(m) = 4T(n/a) + logn				
No. 2	V				
	a=4 b=2 fen)= logn. asbare const. fens is tre. Masser's theorem applicable.				
	$c = \log_{10} \alpha = \log_{10} 2^{2} = 3$; $n^{c} = n^{2}$				
	d(n) < n				
	case 1 is opplied				
	$\left \tau(n) = O(n^2) \right $				
	TARREST AND				
14-	$T(n) = \sqrt{n} T(n/2) + \log n$				
	$a=\sqrt{n}$ $b=2$, $f(n)=\log n$.				
	As a is not constant: Master's Theorem not-applicable.				
12 -	T(n) = 3T(n/2) + n				
13-					
	a=3, b=2, f(n)=n alban constant, finisitive				
	Moster's theorem is applicable. C = log a = log 3 = 1.58				
	Jb J2				
	- case 1 is opplied hure				
	$T(n) = O(n^{1.58})$				

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T(n)= 3T(n/3)+ Jn
       a=4 b=2 (constants) f(n)=e(n) (+ve)
16
                        (constant) fen)-nlogn (tre)
17
             b=3 (constants), fen)=1/2 (tw)
Master's theorem is applicable here.
              trane 2 is applied here

T(n) = o(n)
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			Date: /			
18-	T(n)=	6T(n/3) + n2 log n				
SHIP SHIP TO SHIP SHIP SHIPS	$a=6$, $b=3$ (constante) $f(n)=n^2\log n$ (+u)					
Numeror Constitution and Ambients of	Master's theorem is applicable here					
The last two processing and a second	c= log a = log 6 = 1.63 ; n= 7					
tion standards and account of	to Branch and and	1	(n)>n'			
d processing and processing	··· (a	se 3 is applied here. I-	T(n)=0(n2logn))			
19	-T. \-	1,7/11.1+ 7/1	Land L. E. Rose at 1982			
19-		4T(n/a) + n/logn				
Bedriver das Sittle specimens by of	Cconstan	=2 f(n) = n/log n. H). (+ve)	= M.T. applicable			
173	(log 2 = 7 ; n =				
-	Jb	·J ₂	(n) < n			
	·· care	e 1 is applied here To	$n)=O(n^2)$			
٧٥-		The state of the s	the sale and the sale of the s			
70	$T(n) = 64T(n/8) - n^2 \log n$					
	1 ·	constants bu - f(n) is a -	A			
	Ma	stir's theorem is not ap	plicable here.			
21-	$T(n) = 7T(n/3) + n^2$					
	a=7, b=3 (conetants), fin) = n2 (+ux)					
	: Master's theorem is opplicable.					
	e = log a = 1	097=1.77 ; n=	= n ^{1.71} .			
			fen) >n°			
		Case 3 is opplied here.	/T(n)=0(n2)			
22-	The state of the s	T(n/x)+ n(x-casn)	to contribute whether have the speller of the second			
			Moster's theorem not applied here.			
Spales (Market Spales)	3		A Company of Comments			