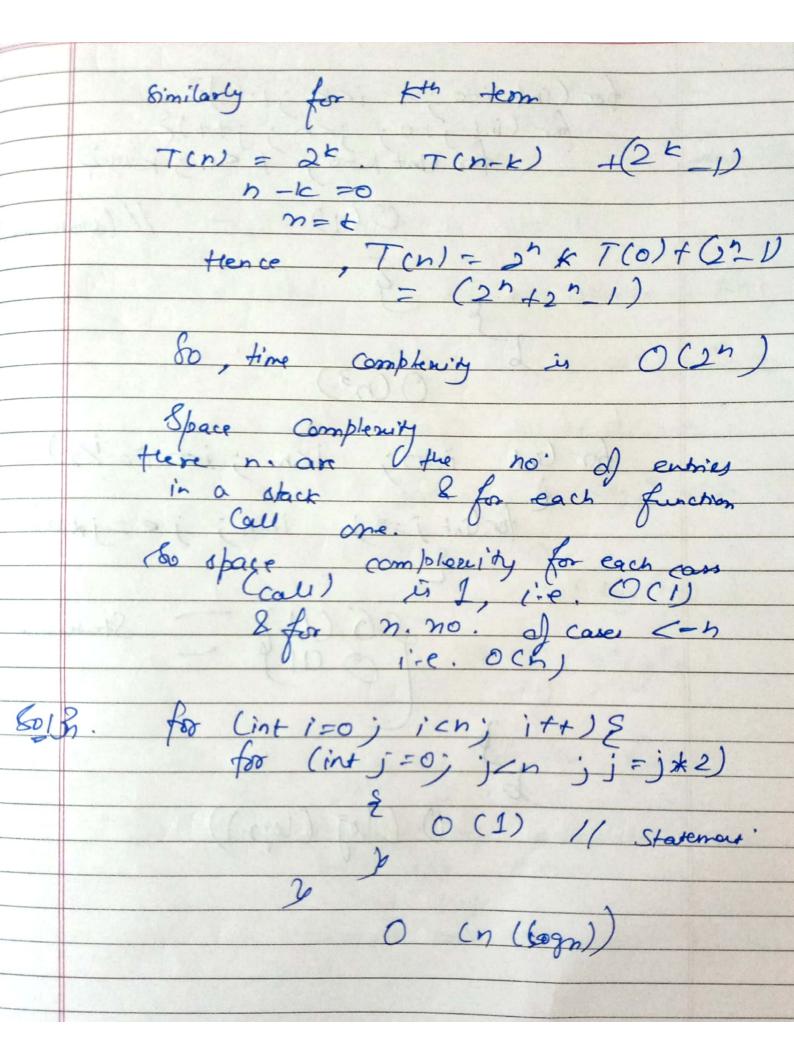
	PAGE No.
	DATE
	Upendra Pandit
	Section-D
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	Tutorial - 2
	THE TOTAL PROPERTY OF THE PROP
Sol 1.	When while loop execute:-
	At first par isl
	pars (-1+2
	3rd pas [= 1+2+3.
	least 1
	Similarly 4th (= 1+2+3+4
	(th
	C ith 1
	for . i'm time i= (1+2+3+4+i) <n< td=""></n<>
	= ((i+1) < 2
	= /:2
	$= \left(\frac{i^2}{2} + \frac{i}{2}\right) < n$
	ignoring 1 & 1
	After neglecting we are left with
	$= i^2 cn$
	· · · · · · · · · · · · · · · · · · ·
	Hence the time complexity is O (Sn)
	Time company is (In)

Soln? Int rectib (int n) & if (n<=1) Eren rectib (n-1) + Dectib (n-2) lime Complexity'. T(n) = I(n-1) + T(n-2)+1 When no & n=1 i.c., T(0) = T(1) = 0 for T(n) = ? there T(n-2) ≈ T(n-1) on Substituting the value of T(n-1) = Ton-2) T(n) = T(n-1) + T(n-1) +1 = 2 × Tcn-1) +1 on Rubstituting Tcn) = 2x (2x Tcn-2)+17+1 T(n) = 4T (n-2) +3 T(n-2) = 2T(n-3) +1 Ten = ax [2x [2x [01-3)+1] +17+1 Jan 2 8 * Jan 2 +7 to) = 16 * T (24) +15;

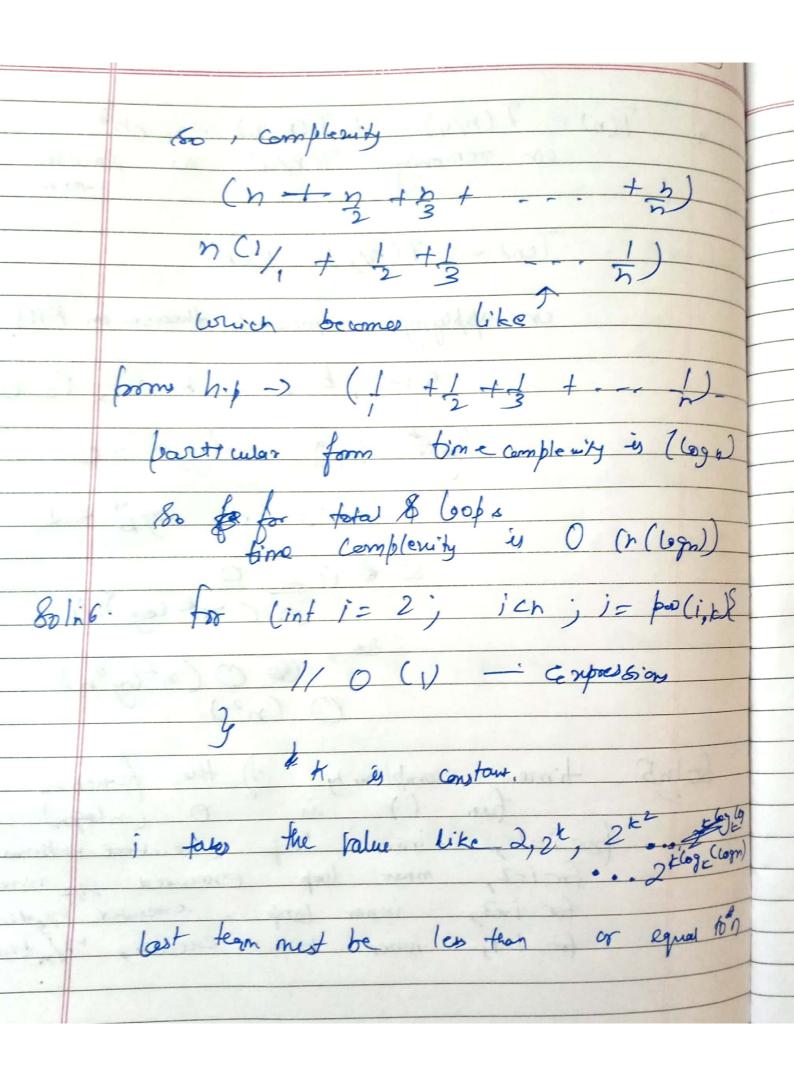


for (int iso; ich; itt)?

for (int jso; ich; jtt)?

for (int leso; ken; ktt)? 0(1) - // (statement) 3 $o(n^3)$ for Cint i=0; i < n; i = i > i > 2for Cint j=0; i < n; j < = j + 256 (1) } = Startemons O Clog (logn)

 $T(n) = T(n/y) + T(n/z) + cn^2$ or removing T(n/y) as smaller term Ton = T(n/2) + cn2 on applying masters theorem on RHS. 950, b=2 K=2, l=0 693 = 690 = 0 0<2 ie. 69 9 < t $2 \notin P \geq 0$ $0 (n^2 \log n)$ $0 (n^2)$ Soln5 time complexity of the function for () is o (nlogn) for ist, inner loop executed in times for 1=3, inner loop executed the sines for 1=3, inner loop knewes metions for 1=4, inner loop executes metions



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	O (logk (log(n))
Soln	
a.	(00 < logn < log (nj) < log (logn) < n < n!
	$< h.logn < log = h < 2^n$ $< 4^n < 2(2n) < h^2$
ю.	$1<\sqrt{\log(n)}<\log(n)<\log(n)>\log(\log n)$
	$1 < \sqrt{\log(n)} < \log(n) < \log(n) < \log(\log n)$ $< \log(2n) < 2\log(n) < \log(n) < \log(n) < \log(n)$ $< n < 2n < 2n < n < n < 2n)$
(c)	$96 < \log_{2}(n) < \log_{2}(n) < \log(n) \times \log(n) \times 1$ $< n \log_{2}(n) < \delta n \log_{2}(n) < 5n < 3n^{2}$ $< 8(2n) < 7n^{3}$
	$28(2n) < 7n^3$