Vidushi shaorma PAGE No. CST-CPL-1 4642 Data & Analycis of Algorithm Alymphotic notations are used to find the I complexity of an algorithm when Enpert is very large Big 0(0):- f(n) = 0g(n) iff (u) < (g(n) for Some the Constant C>0 g(n) is "tignt upper bound" offlw) big omega (r) : f(n) = sr (g(n)) t nzno for some constant c70 gen) is " tight bener bound" Theta (0) 6 f(u) = O(g(u)) + nz max (n, ng) for some constant C, >0 \$ c2>0 g (a) is both "tight upper bound

PAGE No. lower bound of f(u)" for [i=1 to n), & P=[*2i] Due 2 ++2,4+8 1,2,4,8 -.. N let kth from " n=1-12×-1) Taking leg on both sides

leg n = K + leg, 2

K = It leg n o (log n) T(n) = 3T(n+) - ()Ques 3 n = n - 1 in (1) T(n-1) = 3T(n-2) (2) put (2) in O (u) = 9T (n-2) T(n-2) = 3T(n-3) - (3) T(n) = 27 T(n-3) T(u) = 31 T(n-1x) N- K=0 (a) = 3" T (n-n)

PAGE No. DATE = 3ⁿ T(0)
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(3ⁿ) T(n) = 2T(n1) ① n = n-1 in eq ① T(n1) = 2T(n-2) ② Dues 4 T(n) = 12-2 47 (n-2) - (3)
n=n-2 in (1) T(n-2) = 2T(n-3) - 4T[u]= DT [u-3)
T[u]= 2KT [u-K) N-K=0 $[u] = 2 \times T [n-n]$ = $2^{n} + [0]$ = 2^{n} $0[2^{n})$ Aus lusb rold functions (int u) int l', count =0,'

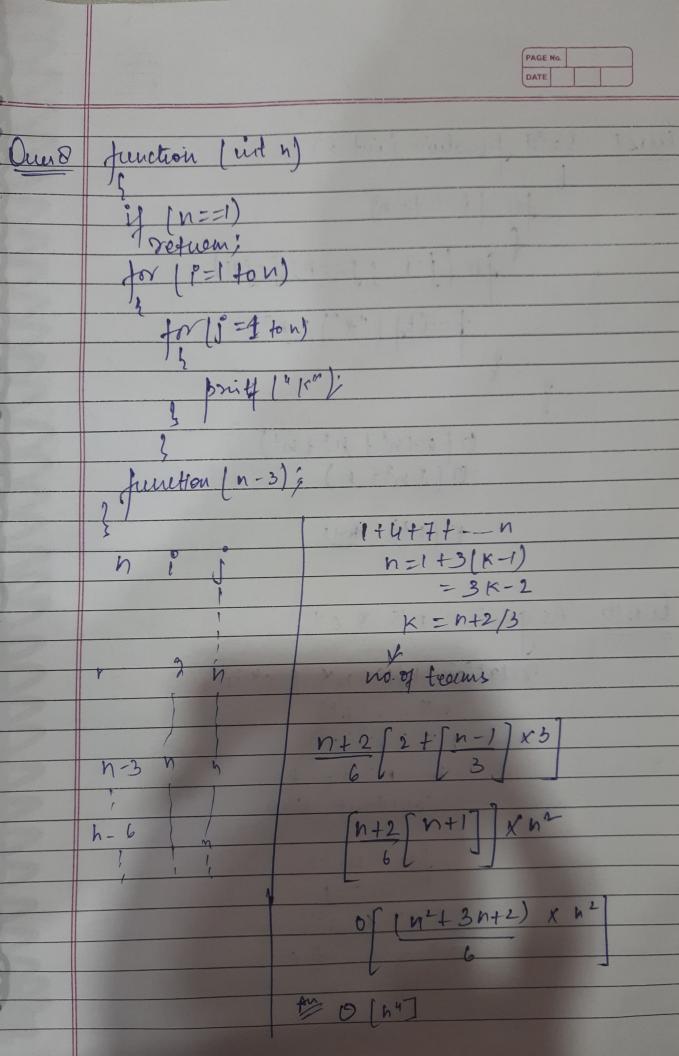
for [1=1:, 1x 1<=n; 1+t)

Count ++;

PAGE No. DATE 0 (1+ JM + JM+JM) 0 (1+3 m) 0 3181 0(111) Aus Void function (int n) Jun 7 (,j)K, count =0; (1°= 1/2; 1° <= 1; 1° ++)

(1°= 1; 1° <= 1; 1° = j + 2)

for (R=1; K<= N; K= R+2) Court ++; (2 + log n x log n)



PAGE No.

Vold function (int n)

for [i=1 to n) Dues 9 for [j=1; j*z=n; j=j+1) pennt ["*"); n2 $0\left(n+n^2+n^2+n^2\right)$ $0\left(3n^2+n\right)$ Ones 10 As quien nk & c9 relation b w nx + c4 is nk=0(ch)
nk ≤ a(ch)
+ n≥ no + Constant, aro for nozl -> 1× 2 021 -> ho=1 9 c=2