Data & Analycis of Algorithm Asymphotic notations are used to find the I complexity of an algorithm when Propert is very large Big 0(0):- f(n) = 0g(n) Horno (g(n) for Some the Constant (>0 g(n) is "tignt upper bound" offen) Big amega (2): -4 (in) = or (g(n)) to neno for some constant cro g(u) is "tight bener bound" Theta (0) 6 -¥ ((v) = 0(g(n)) + nz max (n, ng) for some constant C, >0 \$ C2>0 g(a) is both "tight upper bound

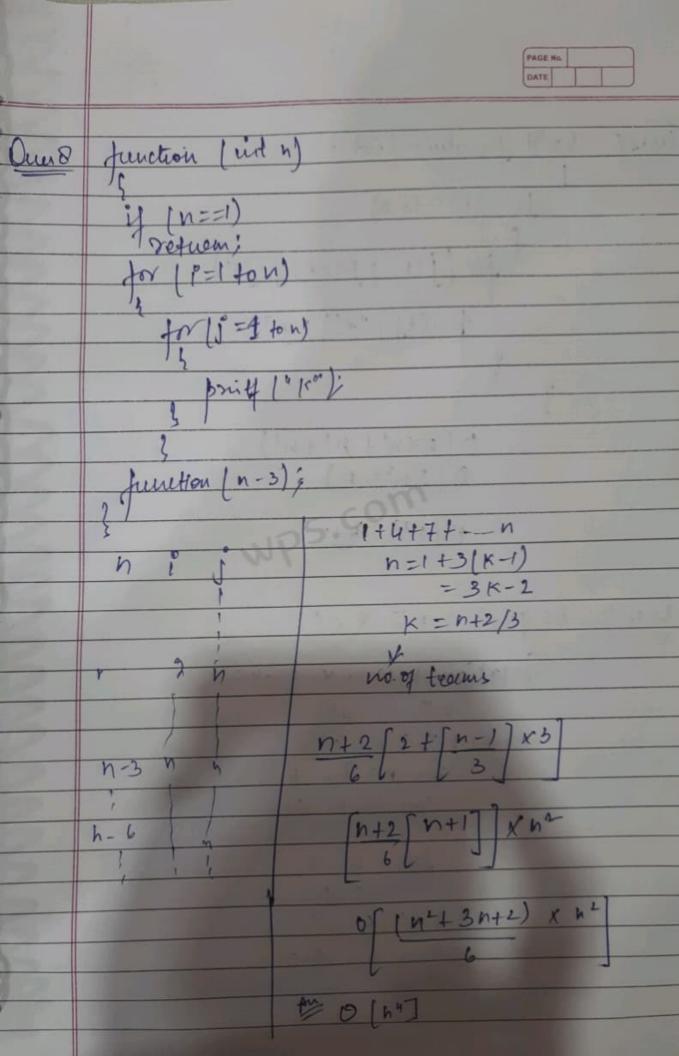
PAGE NA lower bound of f(u)" for [i=1 to n), \$ P=[*2i] Que 2 +9,4+8 12,4,8 -.. N let Kth team " " n=1./2×-1) Taking leg on both sides deg n = K+ leg, 2 K= It led in o (log n) ML. T[n] = 3T[n+) -(). Ques 3 n= n-1 in () T(n-1) = 3T (n-2) () put (2) in O (u) = 9T (n-2) n= n-2 in 0 T/n-2)=37(n-3)-(3) T(u) = 27 T(u-3) T(u) = 3KT (n-K) N- K=0 T(u) = 3" T 1 n-n)

PAGE No. DATE = 3ⁿ T(0) = 3ⁿ \(\sigma_1\) T(n) = 2T(n+1) + 0 n = n-1 in eq 0 T(n+1) = 2T(n-2) + 0Dues 4 T(n) = 1-2 47 (n-2) - 3 T | n-2) = 2T (n-3) - 9 T[u] = DT [u-3) n-K=0 $T(v) = 2^{\kappa}T(n-n)$ = $2^{n}T(0)$ = 2^{n} $0(2^{n})$ Aus rold functions (int u) Quest int &, count =0, for [1=1; 1* 1< = n; 1++)

PAGE No. 0 1+ Jm + Jn+Jn) 0 (1+ 3 Jm) 0 3181 0(11) +u1 Vold function (int n) Jun 7 ())) K, count = 0; (| = | 12; | K= | ++)

or (= | 1; | <= | 1; | = | +2)

for (K=1; K <= | N; K= | K × 2) Count ++; * log n x log n)



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Vold function (int n)

1

for [1=1 to n) Dues 9 fr/[j=1; j<=n; j=j+1) pennt ["*"); n2 0 (3n2+ n) D (12) 1443 Ones 10 As quien nis & c9 relation b w nx & c4 is nk=0(ch)
nk ≤ a(ch)
+ nz no + Constant, aro

for no 21

C=2

→ 1× ≤ a21

→ ho=1 9 c=2