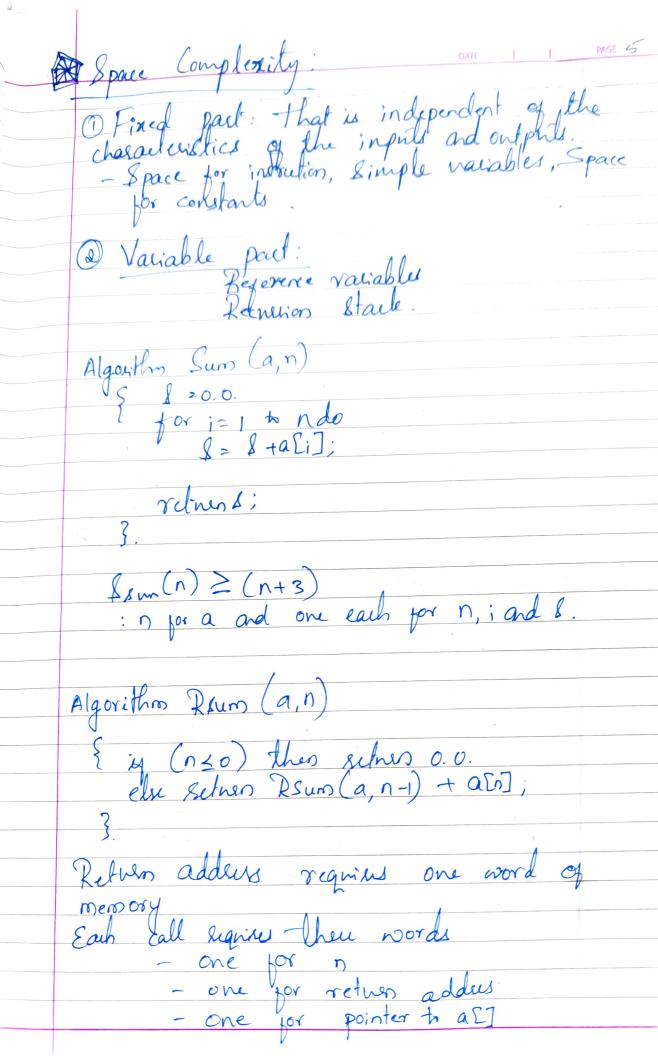
( 63 (Marsance program. yormanic (4)2 SHO exem ટ્ટ Cour Jo x 200 8 Juesc De may 200 3

Peyormance analysis: - Space Complenity of an algorithm. the amount of memory it needs to seen to consplition Time Complexity of an algorithm is the amount of computer time it needs to run to Completion. Peyormance Evaluation 1 Prior Estingles
1 Posterior lesting. Total Computation time
= Execution time for instruction &
frequency count. Now Execution time for instruction varies from machine to machine. It depends on which we execute only plopped. Deglam,

Intkution let of the machine language

Time required to execute an institute of the compiler used for translating the high level language to mice level language. Friquency Court is is the no of times as instruction is executed in the execution of the



Since depth of the recuesion is n+1 in Time Complexity will be 73(n+1): Time Complenity: Frequency Count: is the number of times as instruction is executed in the execution of the peoples. Eq: Algorithm Add (a,b,C,m,n)

for i=1 to m do

m+1

for j=1 to n do

c[i][j] = a[i][j] + b[i][j];

mn 2mn+2m+1 Asymptotic Natation. Big O: , A, D 1 rejer Sahani ① 3n+2 = O(n)  $3n+2 \le 4n$  for all  $n \ge 1$  3n+2 = O(n). (2) Prove 30+2=0(0) Now  $3n+2 \ge 3n$  for all and  $3n+2 \le 4n$  for all ie  $C_{1}=3$ ,  $C_{2}=4$  $\gamma \geq 2$  $n \geq 2$  $3n \leq 3n+2 \leq 4n$ por all n≥2

.1. 30+2 =0(n)

(3) Prone 3n+2 = [](n) for all n > 2 Now 30+23 30 : 30+2 = 10(n)10n2+4n+2 = 0(n2) rone  $|0n^2+4n+2| = |1n^2|$  for all  $n \ge 5$ as (00n +6 = 2(n). frome 100n+6 > 100n  $642^{0} + n^{2} = 12(n)$ Prone 6×27+n21> 2n. 6 ×2n+n2 = -2(2n). 20(logn)c  $O(1)_{r} < O(n) < O(n^{2}) < O(n^{3}) - ... < O(2^{n})$ 9 Show that 50 - 60 = O(n2). Now  $5n^2 - 6n > 4n^2$   $n \ge 6$ . and  $5n^2 - 6n < 6n^2$   $n \ge 2$  $4n^{2} < 5n^{2} - 6n < 6n^{2}$  for all  $n \ge 6$ .  $5n^{2} - 6n = \Theta(n)$ . Check whether following algorithm's correct or not Algorithm Exp(x,n)

Sm=n; power=1; Z=x;

Swhile (m >0) do. { while ((m mod 2) z = 0) do  $\{ m = m/2 ; 7 = Z^2 \}$ m=m-17 power = power 47; return power;