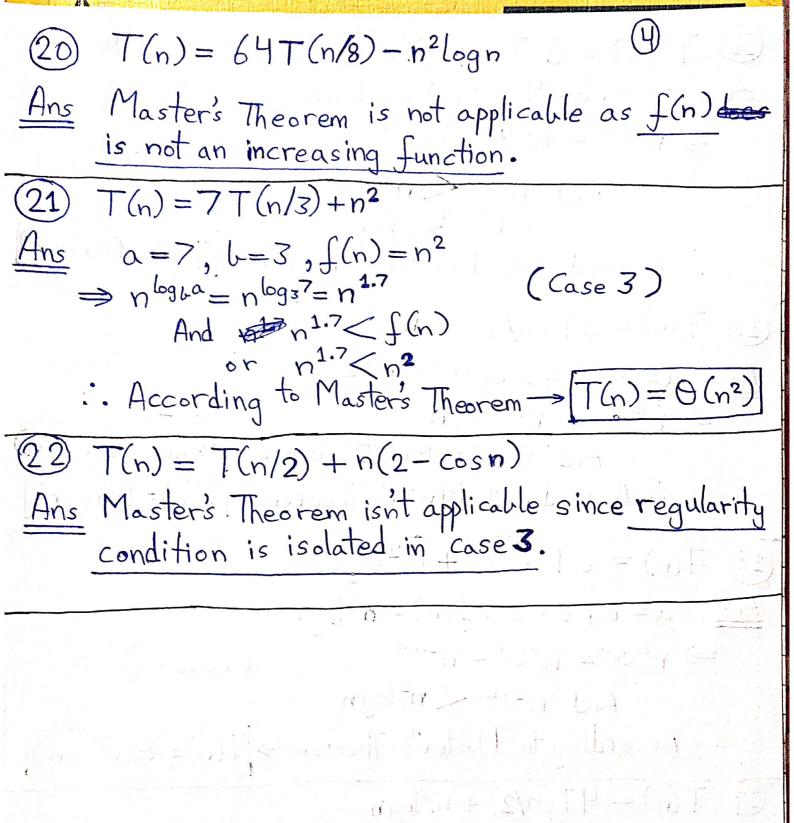


(16)  $T(n) = 3T(n/4) + n \log n$ Ans a=3, b=4,  $f(n)=n \log n$ > nlogba = nlogny3 = n 0.79 (Case 3) And n 0.79 < n log n
or n 0.79 < f(n) .. According to Master's Theorem > T(n)= O(nlogn) (17) T(n) = 3T(n/3) + n/2 $\underline{Ans}$  a=3, b=3, f(n)= $\frac{s}{n}/2$ (Case 2) > nlogola = nlog33 = n And O(n) = O(n/2) (since both are order of n) ... According to Master's Theorem > T(n) = O(nlogn) (18) T(n) = 6T(n/3) + n2 logn Ans a=6, b=3,  $f(n)=n^2\log n$ =) nlogua = nlog36 = n1.63 (Case 3) And  $n^{1.63} < n^2 \log n$ .. According to Master's Theorem -> [T(n) = O(n2logn)] (19) T(n) = 4T(n/2) + n/logn Ans a=4, b=2,  $f(n)=n/\log n$  $\Rightarrow$   $n^{\log_1 a} = n^{\log_2 4} = n^2$ (Case 1) And  $n^2 > f(n)$ .. According to Master's Theorem → [T(n)=0(n2)]



0.7 H. L. 2 - 1 L. T. L. n

(Sub-standard ) = water of participation with the