Treformal >4

(I)

$$T(m) = 3T(m/2) + m^{2}$$

$$\alpha = 3, \quad b = 2, \quad k = 2$$

$$\log_{2} 3 = 1.585 < k = 2$$

$$\therefore T.C \Rightarrow O(m^{2})$$

(1)  $t(n) = 4t(n/2) + m^2$  a = 4, b = 2  $log_2 4 = 2 = k = 2$   $log_2 4 = 2 = k = 2$   $log_2 6 = k = 2$ 

 $\frac{3}{3} = \sqrt{m/L} + \sqrt{m} - pow(2, m)$   $\frac{a_2 / b_2 2}{b_2 + b_3} = m = 2 / k = m, p = 0$   $\frac{\log_2 + b_3}{b_3} = 2 / k = m = 2 / k = m, p = 0$   $\frac{\log_2 + b_3}{b_3} = 2 / k = m / p = 0$   $\frac{\log_2 + b_3}{b_3} =$ 

(4) 760 = 2"T(n/2) + m"
Master theorem not opplicable

 $\frac{167 = 16T(n/4) + m}{a = 16, b = 4, k = 1}$   $\frac{6\pi^{16} = 2 + k = 1}{7 + c \Rightarrow 0 (m^2)}$ 

(B)  $t_{0}^{2} = 2 + (n/2) + n \log n$  a=2, b=2, k=1, f=1  $log_{b}a = log_{2} = 2 = |k=1, p=1|$  $-1 - 1 - 2 \Rightarrow O(n log_{n}^{2})$ 

J (m)= 2 (m) + n/logn a=2, b=2, k=1, p=-1 (14) T(n) = 3 + (0/3) + 20 5 m log33=1 > K=1/2 0 (n) log2 2 = 1 = K, P = -1
O(n by (logn)) (15) TOD= 4 TOO/2) + con log2 4= 2 7 K=1 (D) -160)=2T(n/4) + n0.5) A(202). a=2, b=4 K=0.51 (16) 7(n) = 37(n/4)+nlogn log 4 2 20 < K=0.5) Q (mo.51) log43=0 < 1x=1, p=1 T(n) = 0.5 T (n/2) + 4n A(nlogn) a = 0, s = 0, k = -1 a = 0, s = 0, k = -1 a = 0, a = 0, a = 0, a = 0(12) -160=3 TO/3) +n/2 log3 3 = 1 = k=1 O(nlogn) Masker thm not afflicable as azi (18) Ton= 6T(n/3) + n2 logn (10) T(0) = 16 T (11/4) +n/ log36 < K22 a=16 b=4 K=1 (m2logn) log416 = 2 > K=1 (9) TO>=4 TO/2) + m/kgn > & (one) Q (m!) log2422 > K21 J(32) (1) 760) = 47(mh) + logn (50) T607=64T618) -n2 logn log\_4=2>K=0 Master thm not afflicable as form  $\theta$  ( $n^2$ ) Ton - In . TO(2) + leggn 2)-7(n)=77(n/3)+n2 Master thm not appliable log37 < k=2 as n is not given in vin => @ (m²) (13) TO )= 3 T(n/2) +n 22) This = T(0/2) + n(2-6) log\_3 + = 1.585 7 K=1 Not applied Masker thm. D(n1.585)