```
If tiln O(gi/n) and to (n) tolgo then ticn)+ to (n)+
     o cmar Eq. (m), q. (n)3. prove the assertions.
     By definition, there exist constant ein such that for
 100
     all nzn; ten) x si quen) a marconi la
        similary there exist constant (11) such that too
          1272; t2 cn) 5 c2. 92 cn)
      all
           eet no-man (n, n) and c-c1+c2 for all n2 no
               +60)+62 (2) 261-81(2) +62.85(2)
            By detinition of manimum
   100 100 (100 1 gich) < man Egich), 9200) 3
              (1009, Cn) zmar Eg. cn), 9, cn) 3
              Thus 150 H 1+6510016
                  4(Cn) +t) (n) 5c,
                 mak & 9. cn), 9. cn) 1+ 62 1/10 11
                 man 29100), 9200)
                Eliculation (2) (Crada)
                  mar (giCn), giCn)3
           Hence
       e contescon to Eman Egran) quenis
    find the time complexity of the recurrence equation
 2.
     cet of consider such that recuirance for merge sort
80
    By using master theorem
                  TCn1 = arcn/b) +fcn)
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