Efe Beydoğan
21991548
CS353 Section 2   HW6

Subject :   Date :....../....../.......

Q1) a) insert 44 → insert 20 → insert 22 → insert 32

insert 34 → insert 46

insert 97 → insert 38 then 26

insert 18

b) insert 44 → insert 20,22 → insert 32 then 34

insert 46 then 17 then 38 → insert 26 then 18

c) insert 44,29,22,32 → insert 34 then 46 then 17 then 38

insert 26 then 18
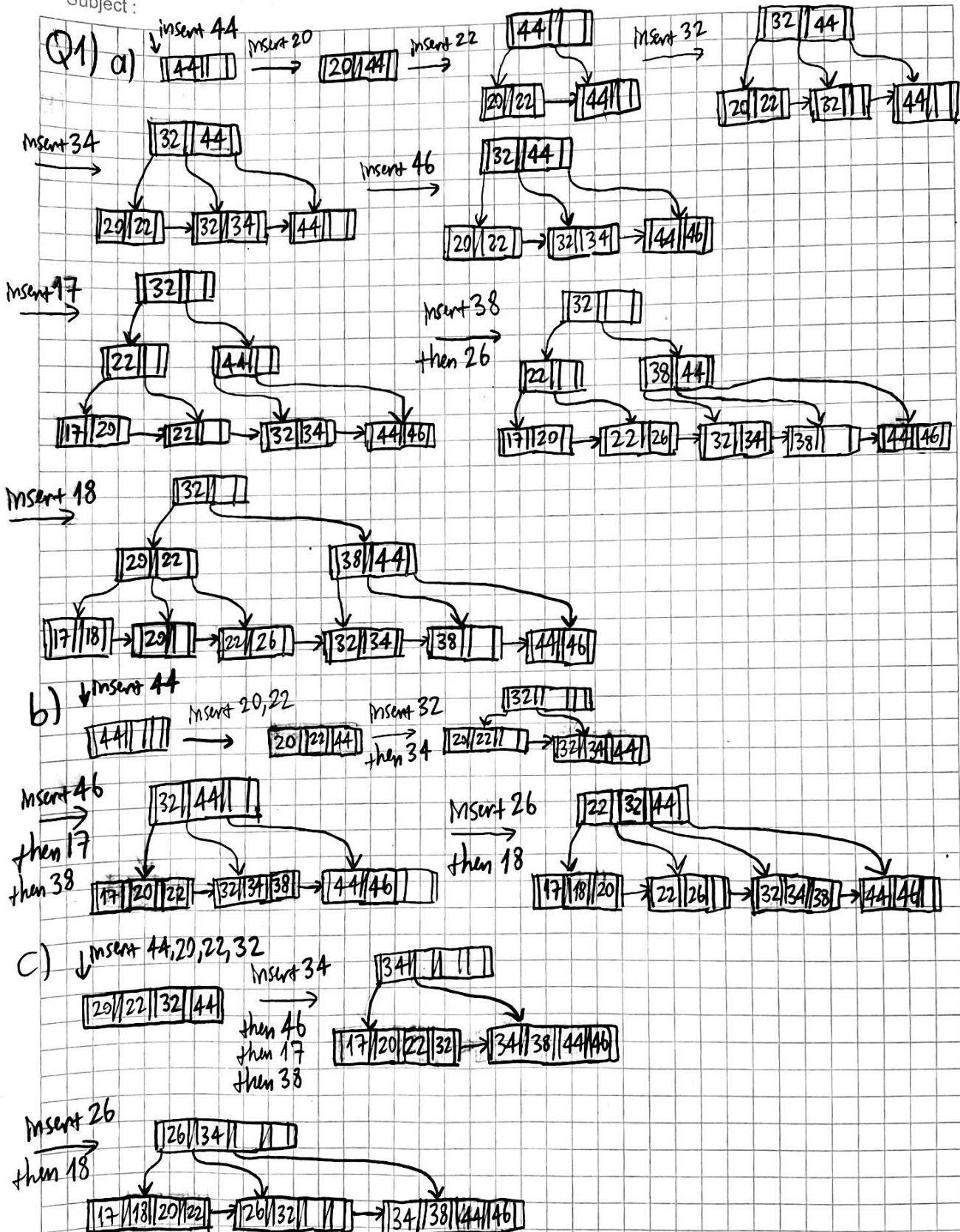
Q2) a) 57   28   26   98   38   79   7   109   30
   1001 1100 1010 0010 0110 1111 0111 1101 1110

Insert 79 00
then 7   01
then109 10
         11

Bucket splits: 98, 79, 30

Splits that double address table: 98, 79, 30
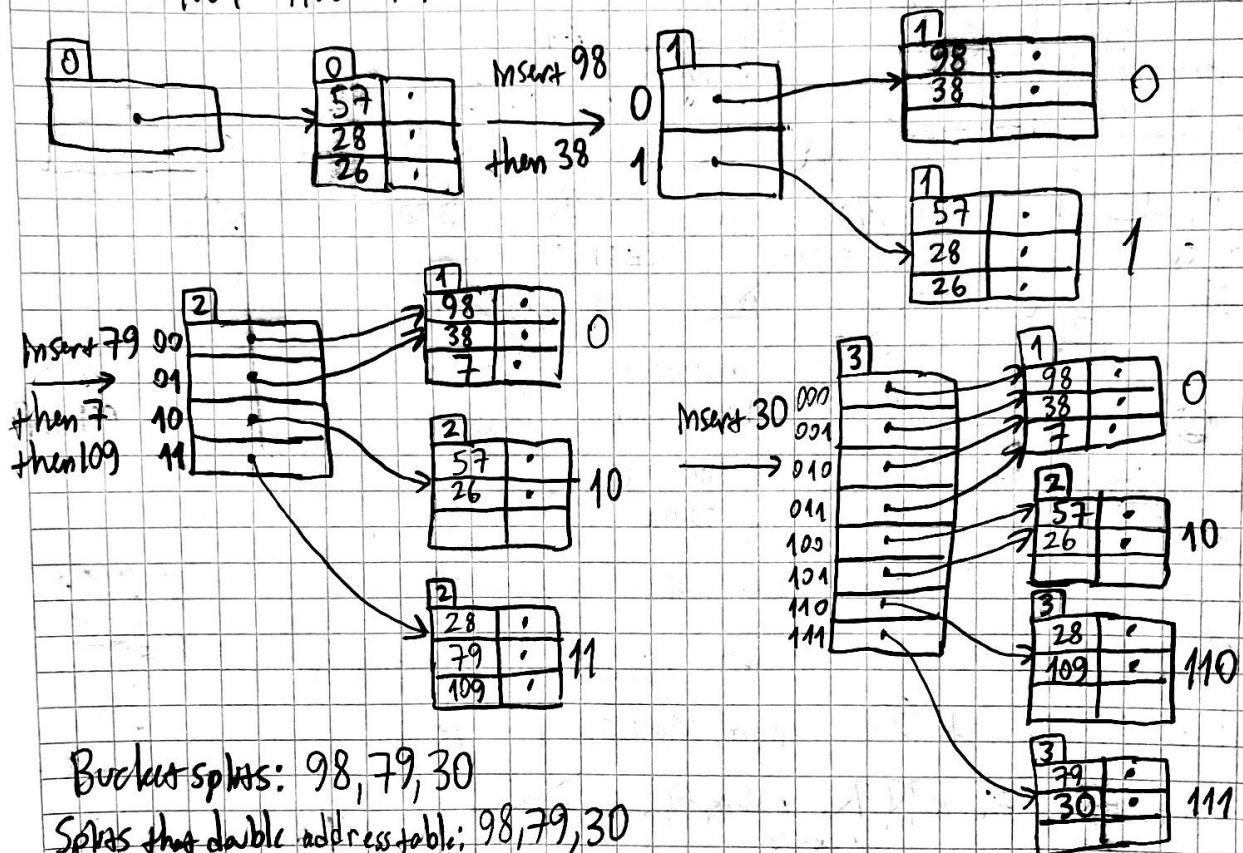
b) i) 3   ii) 2   iii) 3   iv) 1   v) 3

Q3) a) $\left\lceil \log_{49}^{(5000/50)} \right\rceil = 2$ merge passes

b) We want $\left\lceil \log_{M-1}^{(100000/M)} \right\rceil = 2$ merge passes

So $\log_{M-1}^{(100000/M)} \leq 2 \implies \dfrac{100000}{M} \leq (M-1)^2 \implies (M-1)^2 M \geq 100000$

By trial and error, M is found to be $\underline{48}$.