Noemi Lemonnier
#40001085

Q.1

i)

0	1	2	3	4	5	6	7	8	9	10	11	12	13
		210	16	95	5	19	150	21		127		38	
		28		30		201	332			10			
						123							

ii) The maximum number of collisions caused by the above insertions is 2.

Q2.

i)

0	1	2	3	4	5	6	7	8	9	10	11	12	13
210	127	16			5		21			38	95		
28		30			19					150	123		
					201					332			
										10			

ii) No, such proposal is senseless because it has a maximum of 3 collisions which is worst than the proposed solution in the previous question.

Q3

i)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	39		29	42					29	48	35	12				35		18

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ii) The size of the longest cluster is 4.
iii) The number of occurred collisions is 8 collisions.
iv) The load factor is 9.

Q4

0	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
95	AVAILABLE									29	30	12	32	14	72			

ii) The size of the longest cluster is 6 and the the complexity is $O(n^2)$.
iii) The number of occurred collisions is 1.

Q5

a)

0	*1*	*2*	*3*	*4*
18		15		22
		25		

b)

0	*1*	*2*	*3*	*4*
18		15	25	22

c)

0	*1*	*2*	*3*	*4*
	15	22	18	25