a- Yes

Equal words have equal hashes since the orderInAlphabet method does not depend on letter case. E.g. AbCd and abcd have the same hash value.

b- No

The range of the hash values this function produces is very limited. Even for a 10 character word with all “Z”s, the value is only 260. For most words the value will be even less and thus the number of collisions will be really high since words compete for very few array slots. The hash function has a very strong preference for array slots with low indexes (say up to ~150) while the rest of the array remains almost completely empty.

c- Most hash values somewhere between 1 and 10*10 → ~ 100 chains
500,000 / 100 = ~ 5000 words per chain

2- The hash function is h=val % arrSize. + == insert, - == delete
22, 12, 20, 13, -22, -20, 32, 12, 14, 13, 16, 29, -32

0	1	2	3	4	5	6	7
32				12	~~20~~	14	13

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
~~32~~	16											12	13	14	29

3- The hash function is h=val % arrSize. + == insert, - == delete
22, 20, 12, 13, 32, 12, 14, 16, 29, 20, -12, 15, 11, 19, 33, 17, 28, 10, 1, -13, 9, 2, 35
(grow the chains downward)

0	1	2	3	4
20	16	22	13	14
15	11	32		29
				19

0	1	2	3	4	5	6	7	8	9
20	11	22	33	14	15	16	17	28	29
10	1	32			35				19
		2							9