CSC 225 B01 - SUMMER 2014 - QUIZ 3

Name:
Student Number:

Question 1 [10 marks]
Insert the sequence

$$12, \quad 44, \quad 13, \quad 88, \quad 23, \quad 39, \quad 11$$

into the hash table below using the hash function

$$h_1(k) = (5k + 3) \bmod 11$$

and resolving collisions by double probing with the secondary hash function

$$h_2(k) = 7 - (k \bmod 7)$$

Index	Value
0	39
1	
2	12
3	44
4	
5	
6	88
7	23
8	12
9	11
10	

Question 2 [10 marks]
Let $U = \{0, 1, 2, \ldots, 54\}$ denote the universe of possible keys for a hashing scheme. Suppose that a hash table of size 11 (with indices $T[0], T[1], \ldots, T[10]$) is used with the hash function

$$h(k) = (4k + 6) \bmod 11$$

Give a set S of 5 distinct values in U which are all mapped to entry $T[10]$ of the hash table by the hash function $h(k)$.

$S =$ 1, 12, 23, 34, 45