

Review Test - Algorithm and Data Structures

Max: Marks-10

Time: 10 min

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If removing element from heap then *

1 point

- ☐ Only child element is deleted in a heap
- ☒ Only root element is deleted in a heap
- ☐ Any element can be deleted in a heap
- ☐ None of above

A hash table of length 10 uses open addressing with hash function $h(k) = k \bmod 10$, and linear probing. After inserting 6 values into an empty hash table, the table is as shown below

1 point

Which one of the following choices gives a possible order in which the key values could have been inserted in the table?

0	
1	
2	42
3	23
4	34
5	52
6	46
7	33
8	
9	

- ☐ 46, 42, 34, 52, 23, 33
- ☐ 34, 42, 23, 52, 33, 46
- ☒ 46, 34, 42, 23, 52, 33
- ☐ 42, 46, 33, 23, 34, 52

Clear selection



In hash functions Division Method : *

1 point

$h(k) = k \bmod M$ Here,

k is the key value, and What is M?

- ☐ Square the value of the key k
- ☒ Size of the hash table.
- ☐ Multiplication

What is the formula used in Linear probing?

1 point

- ☐ Hash key = key mod table size
- ☒ Hash key = $(\text{hash}(x) + F(i)) \bmod \text{table size}$
- ☐ Hash key = $(\text{hash}(x) + F(i^2)) \bmod \text{table size}$
- ☐ $H(x) = x \bmod 17$

Clear selection

What is the formula used in quadratic probing? *

1 point

- ☐ Hash key = key mod table size
- ☐ Hash key = $(\text{hash}(x) + F(i)) \bmod \text{table size}$
- ☒ Hash key = $(\text{hash}(x) + F(i^2)) \bmod \text{table size}$
- ☐ $H(x) = x \bmod 17$



Which of the following technique is used for handling collisions in a hash table?

1 point

- ☒ Open addressing
- ☐ Hashing
- ☐ Searching
- ☐ Hash function

[Clear selection](#)

What is the time complexity of delete function in the hash table using list head?

1 point

- ☒ $O(1)$
- ☐ $O(n)$
- ☐ $O(\log n)$
- ☐ $O(n \log n)$

[Clear selection](#)

What is the time complexity of search function in a hash table using list head?

1 point

- ☒ $O(1)$
- ☐ $O(n)$
- ☐ $O(\log n)$
- ☐ $O(n \log n)$

[Clear selection](#)

Which of the following helps keys to be mapped into addresses?

1 point

- ☒ Hash function
- ☐ Separate chaining
- ☐ chaining using a linked list list

Clear selection

Let us consider a list of numbers (34, 16, 2, 93, 80, 77, 51) and has table size is 10. What is the order of elements(from index 0 to size-1) in the hash table? 1 point

- ☐ null, null, 77, 16, null, 34, 93, 2, 51, 80
- ☐ 77, 16, 34, 93, 2, 51, 80
- ☒ 80, 51, 2, 93, 34, null, 16, 77, null, null
- ☐ 80, 51, 2, 93, 34, 16, 77

Clear selection

Page 1 of 1

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