

# Rajalakshmi Engineering College

Name: Gurucharan Chandramohan  
Email: 240801092@rajalakshmi.edu.in  
Roll no: 2116240801092  
Phone: 6379544451  
Branch: REC  
Department: I ECE FA  
Batch: 2028  
Degree: B.E - ECE

Scan to verify results



## NeoColab\_REC\_CS23231\_DATA STRUCTURES

### REC\_DS using C\_Week 7\_MCQ\_Updated

Attempt : 1  
Total Mark : 20  
Marks Obtained : 16

#### Section 1 : MCQ

1. What is the initial position for a key k in a linear probing hash table?

**Answer**

$k \% \text{table\_size}$

**Status : Correct**

**Marks : 1/1**

2. Which of the following best describes linear probing in hashing?

**Answer**

Resolving collisions by linearly searching for the next free slot

**Status : Correct**

**Marks : 1/1**

3. What would be the result of folding 123456 into three parts and summing:  $(12 + 34 + 56)$ ?

**Answer**

102

**Status :** Correct

**Marks :** 1/1

4. In the division method of hashing, the hash function is typically written as:

**Answer**

$h(k) = k \% m$

**Status :** Correct

**Marks :** 1/1

5. Which of the following values of 'm' is recommended for the division method in hashing?

**Answer**

A prime number

**Status :** Correct

**Marks :** 1/1

6. In C, how do you calculate the mid-square hash index for a key k, assuming we extract two middle digits and the table size is 100?

**Answer**

$((k * k) / 10) \% 100$

**Status :** Wrong

**Marks :** 0/1

7. What is the worst-case time complexity for inserting an element in a hash table with linear probing?

**Answer**

$O(n)$

Status : Correct

Marks : 1/1

8. In the folding method, what is the primary reason for reversing alternate parts before addition?

Answer

To reduce the chance of collisions caused by similar digit patterns

Status : Correct

Marks : 1/1

9. What happens if we do not use modular arithmetic in linear probing?

Answer

Index goes out of bounds

Status : Correct

Marks : 1/1

10. What is the primary disadvantage of linear probing?

Answer

Clustering

Status : Correct

Marks : 1/1

11. Which C statement is correct for finding the next index in linear probing?

Answer

`index = (index + 1) % size;`

Status : Correct

Marks : 1/1

12. Which of the following statements is TRUE regarding the folding method?

**Answer**

It divides the key into parts and adds them.

**Status :** Correct

**Marks :** 1/1

13. In division method, if key = 125 and m = 13, what is the hash index?

**Answer**

8

**Status :** Correct

**Marks :** 1/1

14. Which folding method divides the key into equal parts, reverses some of them, and then adds all parts?

**Answer**

Folding boundary method

**Status :** Wrong

**Marks :** 0/1

15. In linear probing, if a collision occurs at index i, what is the next index checked?

**Answer**

$(i + 1) \% \text{table\_size}$

**Status :** Correct

**Marks :** 1/1

16. Which data structure is primarily used in linear probing?

**Answer**

Array

**Status :** Correct

**Marks :** 1/1

17. What does a deleted slot in linear probing typically contain?

**Answer**

A special "deleted" marker

**Status :** Correct

**Marks :** 1/1

18. Which situation causes clustering in linear probing?

**Answer**

Sequential key insertion

**Status :** Wrong

**Marks :** 0/1

19. What is the output of the mid-square method for a key  $k = 123$  if the hash table size is 10 and you extract the middle two digits of  $k * k$ ?

**Answer**

1

**Status :** Correct

**Marks :** 1/1

20. Which of these hashing methods may result in more uniform distribution with small keys?

**Answer**

Division

**Status :** Wrong

**Marks :** 0/1