# Rajalakshmi Engineering College

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## NeoColab\_REC\_CS23231\_DATA STRUCTURES

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

Attempt : 1 Total Mark : 20 Marks Obtained : 19

Section 1 : MCQ

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

Answer

(i + 1) % table\_size

Status: Correct Marks: 1/1

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

**Answer** 

102

Status: Correct Marks: 177

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

## **Answer**

index = (index + 1) % size;

Status: Correct Marks: 1/1

4. 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

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

#### **Answer**

h(k) = k % m

Status: Correct Marks: 1/1

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

### **Answer**

Index goes out of bounds

Status: Correct Marks: 1/1

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

## Answer

Array

Status: Correct Marks: 177

24	8. Which of the following best describes linear probing in hashin Answer Resolving collisions by linearly searching for the next free slot Status: Correct	ng? 2 <sup>A180131A</sup> Marks : 1/1
	9. What does a deleted slot in linear probing typically contain?	
241	Answer A special "deleted" marker Status: Correct  10. What is the primary disadvantage of linear probing?	Marks: 1/1
	Answer	
	Clustering Status: Correct	Marks : 1/1
241	11. Which of these hashing methods may result in more uniform distribution with small keys?  Answer  Mid-Square  Status: Correct	n 2 <sup>A180131A</sup> Marks: 1/1
	12. 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	
24	Status: Wrong	Marks: 0/1

13. 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) / 100) % 100

Status: Correct Marks: 1/1

14. 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

15. Which situation causes clustering in linear probing?

#### Answer

All the mentioned options

Status: Correct Marks: 1/1

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

#### **Answer**

A prime number

Status: Correct Marks: 1/1

17. 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

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

Answer

Folding reversal method

Status: Correct Marks: 1/1

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

Answer

k % table\_size

Status: Correct Marks: 1/1

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

Answer

8

Status: Correct Marks: 1/1

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