# Rajalakshmi Engineering College

Name: shobbika T
Email: 240701502@rajalakshmi.edu.in
Roll no: 240701502
Phone: 7305423247
Branch: REC
Department: I CSE FE
Batch: 2028
Degree: B.E - CSE

## NeoColab_REC_CS23231_DATA STRUCTURES

## REC_DS using C_Week 7_MCQ_Updated

Attempt : 1
Total Mark : 20
Marks Obtained : 18

## Section 1 : MCQ

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

*Answer*

8

*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 : 1/1*

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

**Answer**

k % table_size

*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 statements is TRUE regarding the folding method?

**Answer**

It divides the key into parts and adds them.

*Status :* Correct                                                    *Marks : 1/1*

6.  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*

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

**Answer**

A special "deleted" marker

*Status :* Correct                                                    *Marks : 1/1*

8. 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*


9. 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*


10. What is the primary disadvantage of linear probing?

*Answer*

Clustering

*Status :* Correct                                                                                              *Marks : 1/1*


11. 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*


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

*Answer*

index = (index + 1) % size;

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) / 10) % 100

*Status :* Wrong                                                                          *Marks : 0/1*

14.   Which situation causes clustering in linear probing?

**Answer**

Sequential key insertion

*Status :* Wrong                                                                          *Marks : 0/1*

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

**Answer**

Array

*Status :* Correct                                                                        *Marks : 1/1*

16.   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*

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

**Answer**

A prime number

*Status :* Correct

*Marks : 1/1*

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

*Answer*

Mid-Square

*Status :* Correct

*Marks : 1/1*

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

*Answer*

Index goes out of bounds

*Status :* Correct

*Marks : 1/1*

20.  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*