43 Lecture - CS301

Important Mcqs

1. **What is the purpose of hashing animation?**
   A) To visualize the working of a hash table
   B) To test the efficiency of a hash function
   C) To optimize the performance of a hash table
   D) To compare different sorting algorithms
   Answer: A

2. **Which of the following is a common technique for handling collisions in hash tables?**
   A) Sorting
   B) Merging
   C) Chaining
   D) Selection
   Answer: C

3. **In hashing animation, what does a slot in a hash table represent?**
   A) A key-value pair
   B) A hash code
   C) A collision
   D) A search operation
   Answer: A

4. **How does a hash function map keys to their corresponding slots in a hash table?**
   A) By performing a mathematical operation on the key
   B) By iterating over each slot in the table
   C) By using a binary search algorithm
   D) By comparing the key to a pre-defined list of values
   Answer: A

5. **Which of the following is an advantage of using hashing over other data structures like arrays or linked lists?**
   A) Constant time complexity for all operations
   B) Lower space complexity
   C) More flexible data organization
   D) Greater accuracy in data retrieval
   Answer: A

6. **What is the role of a load factor in a hash table?**
   A) To control the number of collisions
   B) To determine the number of slots in the table
   C) To improve the performance of the hash function
   D) To ensure the hash table is sorted
   Answer: A

7. **Which of the following is a disadvantage of using chaining to handle collisions in a hash table?**
   A) Increased space complexity
   B) Decreased search efficiency
   C) More complex implementation
   D) Lower load factor
   Answer: A

8. **What is open addressing in hash tables?**
   A) A technique for handling collisions by storing values in linked lists
   B) A technique for handling collisions by searching for the next available slot in the table
   C) A technique for handling collisions by rehashing the key
   D) A technique for handling collisions by using a binary search algorithm
   Answer: B

9. **In a hash table, what is the worst-case time complexity for a search operation?**
   A) O(1)
   B) O(log n)
   C) O(n)
   D) It depends on the specific hash function
   Answer: C

10. **How does the performance of a hash table change as the load factor increases?**
    A) It becomes faster
    B) It becomes slower
    C) It remains constant
    D) It depends on the specific hash function
    Answer: B