**Basic Theoretical Questions**

1 .What is the worst case complexity of binary search using recursion?  
a) O (n log n)  
b) O (log n)  
c) O(n)  
d) O(n2)

Answer: B

2. In which of the cases uniform binary search fails compared to binary search?  
a) A table lookup is generally faster than an addition and a shift  
b) Many searches will be performed on the same array  
c) Many searches will be performed on several arrays of the same length  
d) Complexity of code

Answer: D

3. What is the average case time complexity of binary search using recursion?  
a) O (log n)

b) O (n log n)  
c) O(n)  
d) O(n2)

Answer: A

4. What is the time complexity of binary search with iteration?  
a) O (n log n)  
b) O (log n)  
c) O(n)  
d) O(n2)

Answer: B

5. Which of the following is not an application of binary search?  
~zdgioa `wryu-) To find the lower/upper bound in an ordered sequence  
b) Union of intervals  
c) Debugging  
d) To search in unordered list

Answer: D

6. Search can be ca-+

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tegorized into which of the following?`!ryu\ 13SCB  
a) Brute Force technique  
b) Divide and conquer  
c) Greedy algorithm  
d) Dynamic programming

Answer: B

7. Which of the following is correct recurrence for worst case of Binary Search?  
a )T(n) = 2T(n/2) + O(1) and T(1) = T(0) = O(1)  
b) T(n) = T(n-1) + O(1) and T(1) = T(0) = O(1)  
c) T(n) = T(n/2) + O(1) and T(1) = T(0) = O(1)  
d) T(n) = T(n-2) + O(1) and T(1) = T(0) = O(1)  
  
Answer: C

8. The average number of key comparisons required for a successful search for sequential search on items is  
a) n/2  
b) (n-1)/2  
c) (n+1)/2  
d) none of these

Answer. C

9. Which of the following is not a limitation of binary search algorithm?  
a)must use a sorted array  
b) requirement of sorted array is expensive when a lot of insertion and deletions are needed  
c) there must be a mechanism to access middle element directly  
d) binary search algorithm is not efficient when the data elements more than 1500.

Answer: D

10. Binary search algorithm cannot be applied to …  
a) sorted linked list  
b) sorted binary trees  
c) sorted linear array  
d) pointer array

Answer. A

11. Which of the following is not the required condition for a binary search algorithm?  
a) The list must be sorted  
b)There should be direct access to the middle element in any sub list  
c) There must be a mechanism to delete and/or insert elements in the list.  
d) Number values should only be present

Answer. C

12. Binary search can be applied on the sorted \_\_\_\_\_\_\_\_\_\_.

a) Array or list.

b) Arguments

c) Queues

d) Pointers.

Answer. A

13. Binary search is useful when there are large number of\_\_\_\_\_\_\_ in array.

a) Arguments

b) Values

c) Elements

d) All the above

Answer. C

14. Binary search, we compare the value with the elements in the \_\_\_\_\_\_\_\_\_\_ position of the array.

A) Right

b) Left

c) Random

d) Middle

Answer. D

15. The number of comparisons for the Binary Tree Search in **best** case is \_\_

a) 1

b) n+1

c) n-1

d) n+1/2

Answer. A