1. The concept of lower bound is based upon the calculation of _____ time required to execute an algorithm.

Minimum | Maximum | Median of time | None of the above

2. The technique used by the lower bound theory are

Comparison trees | Oracle and adversary arguments | State space methods | All of the above

3. In comparison trees, what kind of comparisons can be included to gain order information?

a ≤ b | a ≥ b | a = b | Either of the above three

4. Which of these symbols is excluded if we assume that all the elements are distinct?

a ≤ b | a ≥ b | a = b | Either of the above three

5. How the mid is calculated for searching an element by binary search?

mid = l+h | mid = (l+h) / l | mid = (l+h) / h | mid = (l+h) / 2

6. Which mathematical function is considered for calculation of mid in binary search?

Floor | Ceiling | Sqrt | Cubrt

7. In a decision tree, which of these represent the comparisons?

Internal nodes | Leaves | Root node | None of the above

8. In a decision tree, which of these represent the outcomes?

Internal nodes | Leaves | Root node | None of the above

9. Which method out of these makes the algorithm works harder by adjusting inputs?

Decision trees | Oracles | Adversary arguments | None of the above

10. In merging of arrays A (1…m) and B (1…n), how many ways are there by which A and B can merge?

C ((m-n), n) | C ((m+n), m) | C ((m+n), n) | C ((m-n), m)

11. We can design against an adversary for ____

Binary search | Merge sort | Finding min and max | All of the above

In finding median problem, which approach is applied?

12.

Divide and Conquer | Dynamic programming | Backtracking | Branch and Bound

13. In majority element problem, if the array is of size N, then the majority element should appear for

More than N times | More than N/2 times | More than N/3 times | More than N/4 times

14. In comparison trees, what kind of comparisons can be included to gain order information?

$a \leq b$ | $a \geq b$ | $a = b$ | Correct

Either of the above three

15. Which of these symbols is excluded if we assume that all the elements are distinct?

$a \leq b$ | $a \geq b$ | Correct $a = b$ | Either of the above three

16. In a decision tree, if the array is of length n, then the total leaves will be

n | n^2 | 2^n | Correct $n!$

17. In finding the second largest key problem, which data structure is used for implementation?

Stack | Queue | Tree | Heap