1. What are the categories of the problems based upon the time complexity?

   Polynomial   Non Polynomial   **Both of the above**   None of the above

2. If any algorithm is having the time complexity of 2^n , then it comes under which category?

   Polynomial   **Non Polynomial**   Dis Polynomial   None of the above

3. Find the odd one out based upon the time complexity.

   Linear search   Binary search   Matrix chain multiplication   **0/1 Knapsack**

4. Find the odd one out based upon the time complexity.

   Graph coloring   Hamiltonian cycle   Travelling salesman problem   **Matrix chain multiplication**

5. Which one is more preferred for algorithms?

   Polynomial   Non Polynomial   Dis Polynomial   None of the above

6. Which of these represents the classes of problems?

   P class   NP class   NP hard class   **All of the above**

7. If any algorithm is non-deterministic and the time complexity is polynomial, then the class of problem is

   P problem   **NP problem**   NP hard problem   None of the above

8. The non deterministic algorithm uses the concept of

   Choice   Success   Failure   **All of the above**

9. The scheduling problem is a sub problem of

   Function   Decision   **Optimization**   None of the above

10. What is the approximation factor of greedy makespan algorithm

    ½   1/3   **3/2**   None of the above

11. The sequencing of jobs on a single processor with deadline constraints is known as

    Job sequencing with deadlines   Job sequencing without deadlines   Job sequencing with processor   None of the above

12. In bin packing problem, we need to _____ the number of bins used.

| Minimize | Maximize | Make it 0 | None of the above |

13. The bin packing problem falls under _____ category.

| P | NP | NP Hard | None of the above |

14. What is the formula for calculation of lower bound of bins?

| Ceil (Total weight/ Bin capacity) | Floor (Total weight/ Bin capacity) | Sqrt (Total weight/ Bin capacity) | None of the above |

15. The bin packing problem takes _____ time.

| Polynomial | Exponential | Linear | None of the above |

16. Based upon the execution, the problem can take

| Polynomial time | Non-polynomial time | Either of the above | None of the above |

17. Find the odd one out.

| Binary search | Merge sort | Graph coloring | Matrix chain multiplication |

18. Find the odd one out.

| Sum of subset | Binary search | Graph coloring | 0/1 Knapsack |

19. Which of these belong to P class?

| Single source shortest path | Optimal merge pattern | Huffman encoding | All of the above |

20. Which of these belong to NP class?

| Sum of subset | Hamiltonian cycle | 0/1 Knapsack | All of these |

21. Cook's theorem states that Boolean Satisfiability problem is

| P problem | NP problem | NP Hard problem | NP Complete problem |

22. A Boolean variable has

| 0 | 1 | Either 0 or 1 | None of the above |

23. A literal holds the value

X	X'	**Either of the above**	None of the above

24. In a CNF expression, the set of clauses can be separated by _____ operator.

OR	**AND**	NOT	None of the above

25. Which of these represents the variant of SAT?

Circuit - SAT	CNF - SAT	3CNF-SAT	**All of the above**

26. Which of these are polynomial time taking problems?

Insertion sort	Linear and binary search	Matrix multiplication	**All of the above**

27. Which of these is not a non-polynomial time taking algorithm?

Sum of subset	Graph coloring	**Merge sort**	TSP

28. Which of these problem falls under P class category?

Huffman encoding	Optimal merge pattern	Single source shortest path	**All of the above**

29. Which of these represents the base problem?

TSP	Graph coloring	**SAT**	None of the above

30. Satisfiability problem comes under

NP-Hard	NP-Complete	**Both of the above**	None of the above