| 1. | What is an algorithm? Explain various properties of an algorithm. |
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| 2. | What is an algorithm? How it differs from flowchart? |
| 3. | Define Algorithm, Time Complexity and Space Complexity. |
| 4. | Define Algorithm. Discuss key characteristics of algorithm. |
| 5. | (i)Explain why analysis of algorithms is important? Explain: Worst Case, Best Case & Average Case Complexity.  (ii) Define: Optimal Solution, Feasible solution, Principle of Optimality. |
| 6. | Arrange following rate of growth in increasing order. |
| 9. | Explain Asymptotic notation. Arrange the growth rate of in increasing order of growth. |
| 10. | What do you mean by Asymptotic Notations? Explain. |
| 11. | Solve the recurrence |
| 12. | Explain counting sort with the help of an example and code. Also, how is counting sort different from other sorting techniques like bubble sort or inserting sort or others. |
| 13. | Explain radix sort with the help of an example and code. Also explain the complexity of radix sort. |
| 14. | Discuss the time and space complexity analysis of Fibonacci sequence with the help of an example. Can this be improved by using dynamic programming? Explain the answer. |
| 15. | Which are the basic steps of counting sort? Write counting sort algorithm. Derive its time complexity in worst case. |
| 16. | Solve following recurrence relation using suitable method and express your answer using Big-oh (O) notation. |