***~~Python Practice Questions~~***

***~~Beginner:~~***

***~~Q1. Write a Python program to check if a number is even or odd. Q2. Write a Python program to find the factorial of a number.~~***

***~~Q3. Write a Python program to check if a number is prime.~~***

***~~Q4. Write a Python program to reverse a string.~~***

***~~Q5. Write a Python program to check if a string is a palindrome. Q6. Write a Python program to find the largest number in a list.~~***

***~~Q7. Write a Python program to count the number of vowels in a string. Q8. Write a Python program to remove duplicates from a list.~~***

***~~Q9. Write a Python program to find the sum of all elements in a list. Q10. Write a Python program to find the length of a string.~~***

***~~Q11. Write a Python program to find the average of a list of numbers. Q12. Write a Python program to find the largest and smallest numbers in a list. Q13. Write a Python program to check if a year is a leap year.~~***

***~~Q14. Write a Python program to find the common elements between two lists. Q15. Write a Python program to find the Fibonacci series up to a given number of terms.~~***

***~~Q16. Write a Python program to convert Celsius to Fahrenheit.~~***

***~~Q17. Write a Python program to find the square root of a number. Q18. Write a Python program to find the common characters between two strings. Q19. Write a Python program to generate a random number between a given range. Q20. Write a Python program to sort a list of numbers in ascending order. Q21. Write a Python program to count the occurrences of each element in a list. Q22. Write a Python program to calculate simple interest.~~***

***~~Q23. Write a Python program to calculate compound interest.~~***

***~~Q24. Write a Python program to find the median of a list of numbers. Q25. Write a Python program to find the sum of all even numbers in a list.~~***

***~~Intermediate:~~***

***~~1. Write a Python program to find the second largest number in a list. 2. Write a Python program to count the frequency of each element in a list. 3. Write a Python program to find the intersection of two lists.~~***

***~~4. Write a Python program to check if a string is an anagram of another string. 5. Write a Python program to find the sum of all prime numbers in a given range. 6. Write a Python program to find the highest occurring character in a string. 7. Write a Python program to implement a binary search algorithm.~~***

***~~8. Write a Python program to reverse the order of words in a sentence. 9. Write a Python program to find the longest common prefix among a list of strings. 10. Write a Python program to find the first non-repeating character in a string. 11. Write a Python program to sort a list of dictionaries based on a specific key. 12. Write a Python program to find the maximum subarray sum in a given list of integers.~~***

***~~13. Write a Python program to implement a stack using a list.~~***

***~~14. Write a Python program to convert a decimal number to binary. 15. Write a Python program to find the missing number in a given list of consecutive numbers.~~***

***~~16. Write a Python program to check if a binary tree is a binary search tree. 17. Write a Python program to find the prime factors of a number.~~***

***~~18. Write a Python program to remove duplicate characters from a string. 19. Write a Python program to implement a queue using two stacks. 20. Write a Python program to find the kth largest element in an unsorted list. 21. Write a Python program to find the maximum difference between two elements in an array such that the larger element appears after the smaller element. 22. Write a Python program to find the longest substring without repeating characters in a given string.~~***

***~~23. Write a Python program to implement a circular linked list.~~***

***~~24. Write a Python program to find the roots of a quadratic equation. 25. Write a Python program to implement a binary search tree and perform operations such as insertion, deletion, and searching.~~***

***~~Advance:~~***

***~~1. Write a Python program to find the longest substring without repeating characters in a given string.~~***

***~~2. Write a Python program to implement a depth-first search (DFS) algorithm for a graph traversal.~~***

***~~3. Write a Python program to implement a breadth-first search (BFS) algorithm for a graph traversal.~~***

***~~4. Write a Python program to find the shortest path between two nodes in a graph using Dijkstra's algorithm.~~***

***~~5. Write a Python program to implement a merge sort algorithm for sorting a list of numbers.~~***

***~~6. Write a Python program to implement a quicksort algorithm for sorting a list of numbers.~~***

***~~7. Write a Python program to implement a binary search algorithm for searching an element in a sorted list.~~***

***~~8. Write a Python program to find the maximum flow in a network using the Ford-Fulkerson algorithm.~~***

***~~9. Write a Python program to implement an autocomplete system using a trie data structure.~~***

***~~10. Write a Python program to implement a regular expression matcher using recursive backtracking.~~***

***~~11. Write a Python program to implement a topological sort algorithm for a directed acyclic graph.~~***

***~~12. Write a Python program to find the longest increasing subsequence in a list of numbers.~~***

***~~13. Write a Python program to implement an efficient algorithm for pattern matching and substring searching.~~***

***~~14. Write a Python program to implement a depth-limited search algorithm for a graph traversal.~~***

***~~15. Write a Python program to implement an algorithm for finding the maximum bipartite matching in a graph.~~***

***~~16. Write a Python program to implement a minimum spanning tree algorithm using Kruskal's algorithm.~~***

***~~17. Write a Python program to implement an efficient algorithm for finding the kth smallest element in an unsorted list.~~***

***~~18. Write a Python program to implement an algorithm for finding the maximum sum subarray in a given list of integers.~~***

***~~19. Write a Python program to implement a heap data structure and perform operations such as insertion, deletion, and finding the minimum element.~~***

***~~20. Write a Python program to implement an efficient algorithm for checking whether a string is a palindrome or not.~~***

***~~21. Write a Python program to implement an algorithm for calculating the factorial of a given number.~~***

***~~22. Write a Python program to implement an algorithm for finding the maximum subarray product in a given list of numbers.~~***

***~~23. Write a Python program to implement an efficient algorithm for checking whether a number is prime or not.~~***

***~~24. Write a Python program to implement an algorithm for calculating the square root of a given number.~~***

***~~25. Write a Python program to implement an efficient algorithm for finding the GCD (Greatest Common Divisor) of two numbers.~~***