

Question Paper for B.Tech

1. Write a Python program to find the sum of all even numbers in a list.
Hint: Use loop and check num % 2 == 0.
2. Given a list, remove duplicate elements without using the set() function.
Hint: Create a new list and append only if not already present.
3. Write a program to reverse a string without using slicing or built-in reverse functions.
Hint: Use loop from last index to first.
4. Write a program to count character frequency in a string using a dictionary.
Hint: Dictionary key = character, value = count.
5. Create a function that takes a list and returns only prime numbers from it.
Hint: Write a function to check prime inside a loop.
6. Write a program to merge two dictionaries.
Hint: Use update() or dictionary unpacking.
7. Write a program to check whether a string is a palindrome.
Hint: Compare string with its reverse.
8. Convert a tuple of numbers to a list, then add 5 to each element.
Hint: list(tuple) then loop.
9. Write a function to find factorial of a number using loop.
Hint: Multiply values from 1 to n.
10. Find the largest and smallest element in a list without using max() or min().
Hint: Assume first element as min/max then compare.
11. Given a dictionary, find the key with maximum value.
Hint: Track value while iterating.
12. Replace all vowels in a string with *.
Hint: Check if character in 'aeiouAEIOU'.
13. Count how many words are in a string without using .split().
Hint: Count spaces + 1.
14. Separate even and odd numbers from a list into two lists.
Hint: Use %2.
15. Write a function to check whether a number is Armstrong.
Hint: Sum of each digit**3 = original number (for 3-digit).
16. Print Fibonacci series up to n terms.
Hint: Start a=0, b=1 and update.
17. Convert a list of tuples into a dictionary.
Hint: Use dict(list_of_tuples).
18. Sort a list without using sort().
Hint: Use nested loops to compare and swap (Bubble Sort).
19. Check if an element exists in a tuple.
Hint: Use in keyword.

20. Remove all punctuation from a string.

Hint: Create a string of allowed characters only.

21. Swap keys and values in a dictionary.

Hint: `new_dict[value] = key`.

22. Count how many times each word appears in a sentence.

Hint: Convert to list using `split()` then use dictionary.

23. Print only elements that appear more than once in a list.

Hint: Count occurrences using dictionary.

24. Use a while loop to print numbers from 1 to 20.

Hint: Start with 1 and increment counter.

25. Convert a string input into integer, float, and boolean, print each.

Hint: Use `int()`, `float()`, `bool()`.

26. Write a function to calculate the average of elements in a list.

Hint: `sum(list)/len(list)`.

27. Remove a key from a dictionary entered by user.

Hint: Use `del dict[key]`.

28. Check whether two strings are anagrams.

Hint: Compare sorted strings.

29. Create a function that returns the count of uppercase and lowercase letters in a string.

Hint: Use `.isupper()` and `.islower()`.

30. Find common elements between two lists without using `set()`.

Hint: Loop through first list and check in second.