Questions:

**TEST-1**

**Q1.** Create a list of 5 numbers and print the **first and last element**.

nums = [10, 20, 30, 40, 50]

print(nums[0], nums[-1])

**Answer:** → [1, 2, 3, 4, 5]

**Q2** Write a program to remove all duplicates from a list while keeping the original order.

nums = [1, 2, 2, 3, 4, 3, 5]

result = []

for n in nums:

    if n not in result:

        result.append(n)

print(result)

**Answer:** → [1, 2, 3, 4, 5]

**Q3.** Rotate a list [1,2,3,4,5] by 2 positions to the right.

nums = [1,2,3,4,5]

k = 2

new = nums[-k:] + nums[:-k]

print(new)

**Answer:** → [4, 5, 1, 2, 3]

**Q4.** Find common elements in two lists using sets.

a = [1, 2, 3, 4]

b = [3, 4, 5, 6]

common = set(a) & set(b)

print(list(common))

Answer: → [3, 4]

**Q5.** Find unique characters in "programming".

s = "programming"

unique = set(s)

print(unique)

**Answer:** → {'m','i','a','g','p','n','o','r'} (order may vary)

**Q6.** Given a tuple of numbers (1,2,3,4,5), create a new tuple with only even numbers.

t = (1,2,3,4,5)

evens = tuple(x for x in t if x%2==0)

print(evens)

**Answer:** → (2, 4)

**Q7.** Reverse words in a sentence "I love Python".

s = "I love Python"

words = s.split()

rev = " ".join(words[::-1])

print(rev)

**Answer:** → "Python love I"

**Q8.** Find all pairs of numbers in a list that sum up to a given number 10.

ums = [1, 2, 3, 7, 5, 8, 4]

target = 10

pairs = []

for i in range(len(nums)):

    for j in range(i+1, len(nums)):

        if nums[i] + nums[j] == target:

            pairs.append((nums[i], nums[j]))

print(pairs)

Answer: → [(2, 8), (3, 7), (5, 5)] (if duplicate 5 exists)

**Q9.** Find all index positions of a given element in a tuple (1,2,3,2,4,2,5) for element 2.

t = (1,2,3,2,4,2,5)

index\_val = [i for i,v in enumerate(t) if v==2]

print(index\_val)

**Answer:** → [1,3,5]

**Q10.** Given two lists, find elements present in the first list but not in the second.

a = [1,2,3,4,5]

b = [4,5,6,7]

diff = set(a) - set(b)

print(diff)

**Answer:** → {1,2,3}