

# NUMPY PRACTICE QUESTIONS (25 QUESTIONS)

## ARRAY CREATION AND PROPERTIES

1. Create a 1D NumPy array containing numbers from 5 to 50 with a step of 5.
2. Create a 2D array of shape (4, 3) filled with ones.
3. Create an array of 6 equally spaced values between 0 and 1.
4. Create a  $3 \times 3$  identity matrix.
5. Find the shape, size, number of dimensions, and data type of a given array.
6. Convert the Python list [10, 20, 30, 40, 50] into a NumPy array.
7. Reshape a 1D array of 16 elements into a  $4 \times 4$  matrix.
8. Flatten a 2D array into 1D using both `flatten()` and `ravel()`. Observe the difference.
9. Access the middle element of a 1D array.
10. Reverse a NumPy array without using loops.

## INDEXING & SLICING

1. Extract all even-indexed elements from a NumPy array.
2. Extract the last column from a 2D array.
3. Slice a 1D array to get alternate elements starting from index 1.
4. Extract a  $2 \times 2$  sub-matrix from a  $3 \times 3$  matrix.
5. Print all elements except the first and last element of an array.

## BOOLEAN & FANCY INDEXING

1. Select all elements greater than 25 from a NumPy array.
2. Replace all negative values in an array with 0.
3. Extract only the elements divisible by 3.
4. Count how many elements are greater than the mean of the array.
5. Find the indices of elements where the value is equal to 50.

## ARRAY OPERATIONS & BROADCASTING

1. Add two NumPy arrays element-wise.

2. Perform matrix multiplication of two compatible matrices.
3. Add a scalar value 10 to every element of a NumPy array.
4. Add a 1D array of shape (3,) to a 2D array of shape (2, 3) using broadcasting.