**NumPy**

**Q1. What does NumPy stand for?**  
Numerical Python.

**Q2. How is NumPy faster than lists?**  
Uses contiguous memory, vectorized operations in C.

**Q3.Difference between ndarray and list?**  
ndarray is homogeneous, supports vectorized math.

**Q4. How to create arrays?**  
 np.array, np.zeros, np.ones, np.arange, np.linspace.

**Q5. What are NumPy data types?**  
 int32, float64, bool, etc.

**Q6. What is slicing in NumPy?**  
 Extracting subarrays using [start:end:step].

**Q7. Difference between reshape() and flatten()?**  
reshape() changes shape, flatten() converts to 1D array.

**Q8. How do you perform element-wise operations?**  
 +, -, \*, / work directly on arrays.

**Q9. What is vectorization?**  
 Replacing loops with array operations for performance.

**Q10. How to find mean, median, std in NumPy?**  
 np.mean, np.median, np.std.

**Q11. What is axis parameter used for?**  
 To perform operations along rows (axis=1) or columns (axis=0).

**Q12. What is broadcasting in NumPy?**  
Ability to perform operations on arrays of different shapes.

**Q13. What is NumPy?**  
A Python library for numerical computations, supports arrays, linear algebra, Fourier transforms, etc.

**Q14. Difference between Python list and NumPy array?**  
 List can hold mixed types; NumPy arrays are homogeneous and faster.

**Q15. How do you create an array in NumPy?**

import numpy as np

arr = np.array([1,2,3])

**Q16. What is broadcasting in NumPy?**  
The ability to perform arithmetic operations on arrays of different shapes.

**Q17. Difference between reshape() and resize()?**  
reshape() returns a new view; resize() changes the original array in place.