Quiz 1: NumPy Basics

What is the mean of a NumPy array containing integers from 1 to 10?

A) 6

**B) 5.5**

C) 5

D) 5.6

Quiz 2: Boolean Indexing

2. Given a NumPy array of random integers between 0 and 100, how do you filter out elements greater than 50?

A) Using np.filter(array, array > 50)

**B) Using array[array > 50]**

C) Using np.filter(array > 50)

D) Using array.filter(array > 50)

Quiz 3: Extracting Data from 2D Array

3. If you have a 2D array, how do you extract the second column and calculate its sum?

A) array[1,:].sum()

B) array[:, 2].sum()

C) array[:, 0].sum()

**D) array[:,1].sum()**

Quiz 4: Trigonometric Functions

4. How can you calculate the sine of an array of angles using NumPy?

A) np.cos(array\_of\_angles)

B) array\_of\_angles.sin()

**C) np.sin(array\_of\_angles)**

D) array\_of\_angles.cos()

Quiz 5: Broadcasting

5. What does broadcasting in NumPy allow you to do?

**A) Perform element-wise operations on arrays of different shapes.**

B) Combine arrays of different data types.

C) Create 2D arrays from 1D arrays.

D) Compute matrix inverses.

Quiz 6: Broadcasting in Action

6. If you have a 2D array and a 1D array of the same length, how can you add the 1D array to each row of the 2D array using broadcasting?

**A) array\_2d + array\_1d**

B) np.add(array\_2d, array\_1d)

C) array\_2d += array\_1d

D) np.concatenate((array\_2d, array\_1d))

Quiz 7: Matrix Multiplication

7. What will be the shape of the result when you perform matrix multiplication between a 3x2 matrix and a 2x4 matrix?

A) 3x2

B) 2x2

**C) 3x4**

D) 2x4

Quiz 8: Standard Deviation

8. Calculate the standard deviation of a NumPy array containing values 1 to 10 (inclusive).

A) 3.12

B) 2.83

C) 3.00

**D) 2.87**

Quiz 9: Exponential Function

9. How can you calculate the exponential values of an array using NumPy?

A) np.sin(array)

B) array.exp()

**C) np.exp(array)**

D) array.log()

Quiz 10: Boolean Indexing

10. What is the result of filtering out even numbers from a NumPy array using boolean indexing?

- A) Prime numbers

- B) Even numbers

**- C) Odd numbers**

- D) All numbers greater than 50

Quiz 11: 2D Array Slicing

11. If you have a 2D array named matrix, how do you extract the first row and calculate its mean?

**- A) matrix[0].mean()**

- B) matrix[:, 0].mean()

- C) matrix[1].mean()

- D) matrix[0, :].mean()

Quiz 12: Max

Given a NumPy array arr containing random integers, how can you find the maximum value in the array using NumPy?

A) max\_val = arr.max()

B) max\_val = np.maximum(arr)

**C) max\_val = np.max(arr)**

D) max\_val = arr.maximum()

Quiz 13: Trigonometric Functions

13. How can you calculate the cosine of an array of angles using NumPy?

- A) array\_of\_angles.cos()

**- B) np.cos(array\_of\_angles)**

- C) np.sin(array\_of\_angles)

- D) array\_of\_angles.sin()

Quiz 14: Matrix Multiplication

14. When performing matrix multiplication between two matrices, which condition must be satisfied?

- A) The number of rows in the first matrix must equal the number of columns in the second matrix.

- B) The matrices must have the same number of rows and columns.

- C) Matrix multiplication is not possible in NumPy.

**- D) The number of columns in the first matrix must equal the number of rows in the second matrix.**

Quiz 15: Array Operations

You have two NumPy arrays, array1 and array2, with the same shape (3x3). You want to perform element-wise multiplication between the two arrays and store the result in a new array named result\_array. Which of the following code snippets accomplishes this task correctly?

A) result\_array = np.dot(array1, array2)

B) result\_array = np.multiply(array1, array2)

**C) result\_array = array1 \* array2**

D) result\_array = array1 @ array2