**Single-Choice Questions**

**1. How do you create a 3x4 array filled with zeros in NumPy?**

A) np.zeros(3, 4)  
B) np.zeros((3, 4))  
C) np.zeros[3, 4]  
D) np.zeros[3][4]  
**Answer:** B

**2. What does np.ones((2, 3)) create?**

A) A 2x3 array filled with ones  
B) A 3x2 array filled with ones  
C) A 2x3 identity matrix  
D) A 3x2 identity matrix  
**Answer:** A

**3. How do you create an array with values ranging from 0 to 9?**

A) np.range(10)  
B) np.array([0, 1, 2, ..., 9])  
C) np.arange(10)  
D) np.linspace(0, 9, 10)  
**Answer:** BCD

**4. How can you create an identity matrix of size 4x4?**

A) np.identity(4)  
B) np.eye(4)  
C) Both A and B  
D) None of the above  
**Answer:** C

**5. Which function is used to create a sequence of evenly spaced values between 1 and 10 with 5 elements?**

A) np.arange(1, 10, 5)  
B) np.linspace(1, 10, 5)  
C) np.array(1, 3, 5, 7, 9)  
D) np.evenly\_spaced(1, 10, 5)  
**Answer:** B

**Code Complete**

**1. Fill in the blank to create a 4x4 identity matrix.**

import numpy as np

identity\_matrix = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

print(identity\_matrix)

**Output:**

[[1. 0. 0. 0.]

[0. 1. 0. 0.]

[0. 0. 1. 0.]

[0. 0. 0. 1.]]

**Answer:**  
np.eye(4)

**2. Fill in the blank to reshape a 1D array into a 3x3 matrix.**

import numpy as np

x = np.array([1, 2, 3, 4, 5, 6, 7, 8, 9])

reshaped\_matrix = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

print(reshaped\_matrix)

**Output:**

[[1 2 3]

[4 5 6]

[7 8 9]]

**Answer:**  
x.reshape((3, 3))

**Finding The Error**

1. Line \_\_\_\_\_\_\_\_ has an error, the correct code should be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Hint:** This code attempts to append a value to a NumPy array.

1 import numpy as np

2 arr = np.array([1, 2, 3, 4])

3 new\_arr = arr.append(5)

4 print(new\_arr)

Expected Output: [1 2 3 4 5]

**Error:** Line 3 has an error.  
**Correct Code:** new\_arr = np.append(arr, 5)

1. Line \_\_\_\_\_\_\_\_ has an error, the correct code should be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Hint:** This code filters an array and calculates the sum of the elements.

1 import numpy as np

2 arr = np.arange(10)

3 filtered\_arr = arr[arr > 5]

4 print(filtered\_arr.sum(1))

Expected Output: 30

**Error:** Line 4 has an error.  
**Correct Code:** print(filtered\_arr.sum())

**Multiple-Choice Questions**

**1. Which of the following are valid ways to create a NumPy array?**

A) np.array([1, 2, 3])  
B) np.arange(5)  
C) np.zeros(4)  
D) np.create\_array([1, 2, 3])

**Answer:** A, B, C