

## Assignment -1

PES2UG22EC081

1. Which of the following is an immutable data type in Python?(1)m
  - a. Set
  - b. Tuple
  - c. List
  - d. Dictionary

Ans: b) Tuple

2. Which of the following correctly defines a dictionary in Python?(1)m
  - a. my\_dict=[1, 2, 3]
  - b. my\_dict={1, 2, 3}
  - c. my\_dict=(1, 2, 3)
  - d. my\_dict={1: 'a', 2: 'b'}

Ans: d) my\_dict={1: 'a', 2: 'b'}

3. Identify the data type of the following variables and explain why that data type is assigned?(4+1)m

a = 12

b = 3.14

c = "Pes University"

d = false

Ans:

- a=12[ **int** (Integer type, because it stores a whole number)].
- b=3.14[**float** (Floating-point type, because it stores a decimal value)].
- c="Pes University"[**str** (String type, because it stores text inside quotes)].
- d=false[**bool** (Boolean type, because it stores a logical value: True/False)].

1. Which NumPy function is used to create a one-dimensional array from a list?(1)m

- a. np.array()
- b. np.create\_array()
- c. np.list\_to\_array()
- d. np.ndarray()

Ans: a) np.array()

2. What is the purpose of NumPy's `reshape()` method?(1)m

- a. To reverse the order of elements in the array.
- b. To change the data type of the array's elements.
- c. To change the shape of an array without changing its data.
- d. To append new elements to the array.

Ans:c) To change the shape of an array without changing its data.

3. Write a Python program using **NumPy** to(2+1+1+1)m

- a. Create a sequence of numbers from 10 to 50 with a step of 5.
- b. Convert this sequence into a NumPy array.
- c. Print the array and its data type.

Ans:

```
import numpy as np

sequence = np.arange(10, 51, 5)

print("Array:", sequence)

print("Data type:", sequence.dtype)
```

output

Array: [10 15 20 25 30 35 40 45 50]

Data type: int64