

Python Assignment

SRN:PES2UG22EC084

1. Consider the following Python code:

```
x = [1, 2, 3, 4, 5]
a = 15
result1 = 4 in x
result2 = type(a) is int
```

What are the values of result1 and result2?

- A. result1 = False, result2 = False
- B. result1 = True, result2 = False
- C. result1 = False, result2 = True
- D. result1 = True, result2 = True

Correct Answer: D) result1 = True, result2 = True
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2. What will be the output of the following Python code?

```
lstSample = [1, 2, 'a', 'sam', 2]
lstSample.insert(2, 'python')
lstSample.pop(4)
print(lstSample)
```

- A) [1, 2, 'python', 'a', 2]
- B) [1, 2, 'python', 'a', 'sam']
- C) [1, 2, 'a', 'python', 2]
- D) [1, 2, 'python', 'sam', 2]

Correct Answer: A) [1, 2, 'python', 'a', 2]
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3. Explain the difference between Python lists and arrays. Create a simple example showing how to create both a list and an array, and demonstrate one operation on each.

Ans:

Creating a list

```
my_list = [1, 2, 'hello', 3.5]
print("List:", my_list)
my_list.append('new')
print("After append:", my_list)
```

Creating an array

```
from array import array
my_array = array('i', [1, 2, 3, 4]) # 'i' for integers
print("Array:", my_array)
my_array.append(5)
print("After append:", my_array)
```

Differences between List and arrays:

Lists: Can contain different data types (mixed data) and it is a built-in Python data structure

Arrays: Can only contain the same data type (homogeneous data) and we need to import the array module.

4. Write a Python program that demonstrates the use of any four string methods. Explain what each method does and provide the expected output.

Ans:

String methods demonstration
text = "python programming"

```
# Method 1: capitalize()
result1 = text.capitalize()
print("capitalize():", result1)
```

```
# Method 2: title()
result2 = text.title()
```

```
print("title():", result2)
```

```
# Method 3: count()
result3 = text.count('p')
print("count('p'):", result3)
```

```
# Method 4: replace()
result4 = text.replace('python', 'java')
print("replace():", result4)
```