**Q1. How can we store a single quote (‘) as a string in a variable?**

To store a single quote (') as a string in a variable in Python, we can use :

1. Double Quotes (“ ”)

Example:

my\_string = "It's a sunny day."

print(my\_string)

# Output: It's a sunny day.

1. Escaping the Single Quote (\)

Example:

my\_string = 'It\'s a sunny day.'

print(my\_string)

# Output: It's a sunny day.

**Q2. Refer the below variable:**

**x = ‘a’**

**Here, is x a character type or string type variable? Support your answer with an explanation.**

Ans: In Python, x = 'a' creates a **string type** variable, not a character type variable.

**String Type**: In Python, a string is defined as a sequence of characters enclosed in quotes (either single ' or double "). Even if the string consists of only one character, it is still treated as a string.

**Character Type**: Python does not have a distinct character type like some other programming languages (e.g., C or Java). In those languages, a character type (often denoted as char) is specifically designed to hold a single character. In Python, a character is simply a string of length one.

x = 'a'

print(type(x))

# Output: <class 'str'>

**Q3. Apply the following functions on this variable: ‘Welcome to Python foundation course'**

**find()**

**count()**

**len()**

**Concatenation**

**Note: You can use your choice of parameters. But make sure it is correct.**

**Ans:** my\_string = 'Welcome to Python foundation course'

1. **Find a Substring (Using find())**

To find the position of a substring, for example, "Python":

position = my\_string.find("Python")

print(f"Position of 'Python': {position}")

# Output: Position of 'Python': 11

**2. Count Occurrences (Using count())**

To count how many times the letter "o" appears in the string:

count\_o = my\_string.count("o")

print(f"Count of 'o': {count\_o}")

# Output: Count of 'o': 3

**3. Get Length (Using len())**

To get the length of the string:

length = len(my\_string)

print(f"Length of the string: {length}")

# Output: Length of the string: 37

4. **Concatenation**

To concatenate the string with another string, for example, " is great!":

concatenated\_string = my\_string + " is great!"

print(concatenated\_string)

# Output: Welcome to Python foundation course is great!

**Q4. For the variable: word = ‘PanaJi@12256’**

**Calculate the following:**

**(a) Total number of alphabets in lowercase**

**(b) Total number of alphabets in uppercase**

**(c) Total number of numerical in string**

Ans: Given string:

word = 'PanaJi@12256'

(a) Total Number of Alphabets in Lowercase

lowercase\_count = sum(1 for char in word if char.islower())

print(f"Total number of alphabets in lowercase: {lowercase\_count}")

# Output: 4

(b) Total Number of Alphabets in Uppercase

uppercase\_count = sum(1 for char in word if char.isupper())

print(f"Total number of alphabets in uppercase: {uppercase\_count}")

# Output: 3

(c) Total Number of Numericals in String

numerical\_count = sum(1 for char in word if char.isdigit())

print(f"Total number of numerical in string: {numerical\_count}")

# Output: 5

**Q5. Write a code to store a numerical value inside a variable then convert it into string.**

Ans: # Store a numerical value

num\_value = 12345

# Convert the numerical value to a string

str\_value = str(num\_value)

# Print the results

print("Numerical Value:", num\_value) # Output: Numerical Value: 12345

print("String Value:", str\_value) # Output: String Value: 12345

print("Type of str\_value:", type(str\_value)) # Output: <class 'str'>