TOPIC: Python Basics Variable

Q.1. Declare two variables, `x` and `y`, and assign them integer values. Swap the values of these variables without using any temporary variable.

Answer: -

```
x = 5
y = 10
print("Before swapping:")
print("x =", x)
print("y =", y)
# Swap the values
x = x + y
y = x - y
x = x - y
print("After swapping:")
print("x =", x)
print("y =", y)
```

Q.2. Create a program that calculates the area of a rectangle. Take the length and
width as inputs from the user and store them in variables. Calculate and display the area.

Answer: -

```
# Take input for length and width from the user
length = float(input("Enter the length of the rectangle: "))
width = float(input("Enter the width of the rectangle: "))

# Calculate the area
area = lenath * width
```

```
area = length * width

# Display the result
print("The area of the rectangle is:", area)
```

Q.3. Write a Python program that converts temperatures from Celsius to Fahrenheit. Take the temperature in Celsius as input, store it in a variable, convert it to Fahrenheit, and display the result.

Answer: -

```
# Take input for temperature in Celsius from the user
celsius = float(input("Enter the temperature in Celsius: "))

# Convert Celsius to Fahrenheit
fahrenheit = (celsius * 9/5) + 32

# Display the result
print("The temperature in Fahrenheit is:", fahrenheit)
```

TOPIC: String Based Questions

Q.1. Write a Python program that takes a string as input and prints the length of the string.

Answer: -

```
# Take input string from the user
input_string = input("Enter a string: ")

# Print the length of the string
print("Length of the string:", len(input_string))
```

Q.2. Create a program that takes a sentence from the user and counts the number of vowels (a, e, i, o, u) in the string.

Answer: -

```
# Take input sentence from the user
sentence = input("Enter a sentence: ")

# Define vowels
vowels = "aeiouAEIOU"

# Initialize count variable
vowel_count = 0

# Count vowels in the sentence
for char in sentence:
if char in vowels:
vowel_count += 1

# Print the number of vowels
print("Number of vowels in the sentence:", vowel_count)
```

```
print("Number of vowels in the sentence:", vowel_count)
```

Q.3. Given a string, reverse the order of characters using string slicing and print the reversed string.

Answer: -

```
# Take input string from the user
input_string = input("Enter a string: ")

# Reverse the string using slicing
reversed_string = input_string[::-1]

# Print the reversed string
print("Reversed string:", reversed_string)
```

Q.4. Write a program that takes a string as input and checks if it is a palindrome (reads the same forwards and backwards).

Answer: -

```
# Take input string from the user
input_string = input("Enter a string: ")

# Check if the string is a palindrome
if input_string == input_string[::-1]:
print("The string is a palindrome.")
else:
print("The string is not a palindrome.")
```

Q.5. Create a program that takes a string as input and removes all the spaces from
it. Print the modified string without spaces.

Answer: -

Answer: -

```
# Take input string from the user
input_string = input("Enter a string: ")

# Remove spaces from the string
modified_string = input_string.replace(" ", "")

# Print the modified string without spaces
print("Modified string without spaces:", modified_string).
```