Loops (While, For) Assignment Questions

Pw skills

1.Print number from 1 to 5 using a while loop.

Ans:-

```
#code
num = 1
while num <= 5:
    print(num)
    num += 1

#output
1
2
3
4
5
```

2.Calculate the m of the number from 1 to 10 using a while loop.

Ans:-

#code

```
# Initialize the product
product = 1
```

```
# Start with the first number
num = 1

# Multiply each number from 1 to 10
while num <= 10:
    product *= num
    num += 1

# Print the result
print("The product of numbers from 1 to 10 is:", product)
```

3. Calculate the factorial of a number using a for loop.

Ans:-

```
# Define a function to calculate factorial
def factorial(n):
    # Initialize the result to 1
    result = 1

    # Iterate from 1 to n (inclusive)
    for i in range(1, n + 1):
        # Multiply result by each number in the range
        result *= i

    # Return the factorial
    return result

# Test the function with an example
number = 5
print("Factorial of", number, "is:", factorial(number))
```

 # output

Factorial of 5 is: 120

4. Count the number of vowels in a string using a for loop.

Ans:-

```
# Define the string
string = "Hello, World!"

# Initialize a variable to store the count of vowels
vowel_count = 0

# Define a list of vowels
vowels = "aeiouAEIOU"

# Iterate through each character in the string
for char in string:
    # Check if the character is a vowel
    if char in vowels:
        # Increment the vowel count
        vowel_count += 1

# Print the result
print("Number of vowels in the string:", vowel_count)

            # output
Number of vowels in the string: 3
```

5. Print a pattern using a nested loop.

Ans:-

```
# Define the height of the triangle
height = 5

# Outer loop for rows
for i in range(height):
    # Inner loop for columns
    for j in range(i + 1):
        print("*", end=" ")  # Print '*' without newline
    print()  # Move to the next line after each row

# Output:

*
* *
* * *
* * * *
* * * * *
```

6.Generate a multiplication table using a nested loop.

Ans:-

```
# code

# Define the size of the multiplication table
size = 10

# Outer loop for rows
```

```
for i in range(1, size + 1):
    # Inner loop for columns
    for j in range(1, size + 1):
        # Print the product of i and j with appropriate
spacing
        print(f"{i * j:4}", end=" ")
    # Move to the next line after each row
    print()
```

This code will generate a multiplication table up to 10x10. Adjust the `size` variable to change the size of the table. The `f"{i * j:4}"` part formats the product with a width of 4 characters, providing proper spacing for the table.