Chap-9 Flow of Control

1. What is the output?

```
for i in range(1, 5):
    print(i)
```

A) 1 2 3 4 5 B) 0 1 2 3 4

C) 1 2 3 4 D) 0 1 2 3

2. What values are generated by range(5)?

A) 1, 2, 3, 4, 5 **B) 0, 1, 2, 3, 4**

C) 0, 1, 2, 3, 4, 5 D) 1, 2, 3, 4

3. What is the output?

```
for i in range(2, 10, 2):
    print(i, end=" ")
```

A) 2 4 6 8 B) 2 4 6 8 10

C) 1 3 5 7 9 D) 2 3 4 5 6 7 8 9

4. What does the third argument of range() represent?

```
range(start, stop, step)
```

A) Starting value B) Ending value

C) Number of repetitions **D) Difference between consecutive values**

5. What is the output?

```
for i in range(5, 0, -1):
    print(i, end=" ")
```

A) 0 1 2 3 4 5 **B) 5 4 3 2 1**

C) 5 4 3 2 1 0 D) 1 2 3 4 5

6. What happens if the condition of a while loop never becomes false?

A) Program stops automatically B) Syntax error occurs

C) Infinite loop occurs D) Loop runs only once

7. What is the output?

```
for i in range(1, 6):
    if i == 3:
        break
    print(i)
```

A) 1 2 B) 1 2 3

C) 3 4 5 D) 1 2 4 5

8. What does break do?

A) Skips the current iteration **B) Stops the loop**

C) Starts the loop again D) Stops the entire Python program

9. What is the output?

```
for i in range(1, 6):
    if i == 3:
        continue
    print(i, end=" ")
```

A) 1 2 3 4 5 **B) 1 2 4 5**

C) 1 2 D) 3 4 5

10. In a nested loop, which loop controls the rows in a pattern?

A) Inner loop **B) Outer loop**

C) if statement D) print()

11. What is the output?

```
x = 0
for i in range(1, 5):
   x = x + i
print(x)
```

A) 4 B) 5

C) 10 D) 15

Because:

0 + 1 + 2 + 3 + 4 = 10

12. What is the output?

```
for i in range(1, 6):
   if i % 2 == 0:
      print(i, end=" ")
```

A) 1 3 5 **B) 2 4**

C) 1 2 3 4 5 D) 0 2 4

13. What does if statement do?

A) Repeats a statement **B) Makes a decision based on a condition**

C) Creates a sequence D) Stops a loop

1. What is the purpose of range() function? Give an example.

Answer:

The range() function generates a sequence of numbers.

Example:

```
for i in range(1, 5):
   print(i)
```

Output:

1

2

3

4

2. Differentiate between for loop and while loop.

Answer:

for loop	**while loop**
Used when the number of repetitions or sequence is generally known.	Used when repetition depends on a condition.
Works with a sequence or range().	Continues as long as the condition is True.

3. What is the difference between break and continue?

Answer:

- **break** terminates the loop completely.
- **continue** skips the current iteration and moves to the next iteration.

4. What is a nested loop?

Answer:

A loop inside another loop is called a **nested loop**.

Example:

```
for i in range(2):
   for j in range(3):
      print("*", end=" ")
   print()
```

5. What is the difference between if and if-else?

Answer:

- if executes a block only when the condition is **True**.
- if-else executes one block when the condition is **True** and another block when it is **False**.

6. Find the output:

```
for i in range(1, 5):
   print(i, end=" ")
```

Answer:

1 2 3 4

7. Write a program to print numbers from 1 to 10.

Answer:

```
for i in range(1, 11):
   print(i, end=" ")
```

Output:

1 2 3 4 5 6 7 8 9 10

8. Explain the three arguments of range() with examples.

Answer:

The syntax is:

range(start, stop, step)

- **start** – starting value.
- **stop** – ending limit, but it is **not included**.
- **step** – difference between consecutive values.

Example:

range(2, 10, 2)

Output:

2 4 6 8

9. Write a program to print the following pattern:

*
**
***
****
*****

Answer:

```
for i in range(1, 6):
   for j in range(1, i + 1):
      print("*", end="")
   print()
```

10. Write a program to print:

*****
****
***
**
*

Answer:

```
for i in range(5, 0, -1):
   for j in range(i):
      print("*", end="")
   print()
```

11. Write a program to print:

1
12
123

1234

12345

Answer:

```
for i in range(1, 6):
   for j in range(1, i + 1):
      print(j, end="")
   print()
```

12. Write a program to find the sum of numbers from 1 to 10.

Answer:

```
sum = 0
for i in range(1, 11):
   sum = sum + i
print("Sum =", sum)
```

Output:

Sum = 55

13. Explain the range() function with suitable examples.

Answer:

The range() function generates a sequence of numbers. It is commonly used with loops.

Its syntax is:

range(start, stop, step)

- **start:** Starting value.
- **stop:** Ending limit, which is **not included**.
- **step:** Difference between two consecutive values.