

TYPE-A:FLOW OF CONTROL:CH-9

1) What is the common structure of Python compound statements?

sol:

A Python compound statement contains a header line ending with a colon : and a block of indented statements (suite) underneath it.

General structure:

header:

```
statement1  
statement2
```

Examples of compound statements include if, for, while, try, and function definitions.

2) What is the importance of the three programming constructs?

sol:

- 1.Sequence – Executes statements one after another. It is important because it defines the normal flow of a program.
2. Selection – Makes decisions using conditions (like if-else). It is important to execute different actions based on different conditions.
- 3.Iteration – Repeats a set of statements using loops. It is important to perform repetitive tasks

3) What is empty statement in Python? What is its need?

sol:

An empty statement in Python is represented by the keyword pass.

It does nothing when executed and is used as a placeholder in code where a statement is required syntactically but no action is needed.

4) Which Python statement can be termed as empty statement?

sol:

```
pass
```

5) What is an algorithm?

sol:

An algorithm is a step-by-step procedure or set of rules used to solve a problem or perform a task. It provides a clear and logical way to reach a solution efficiently and helps programmers design programs that work correctly.

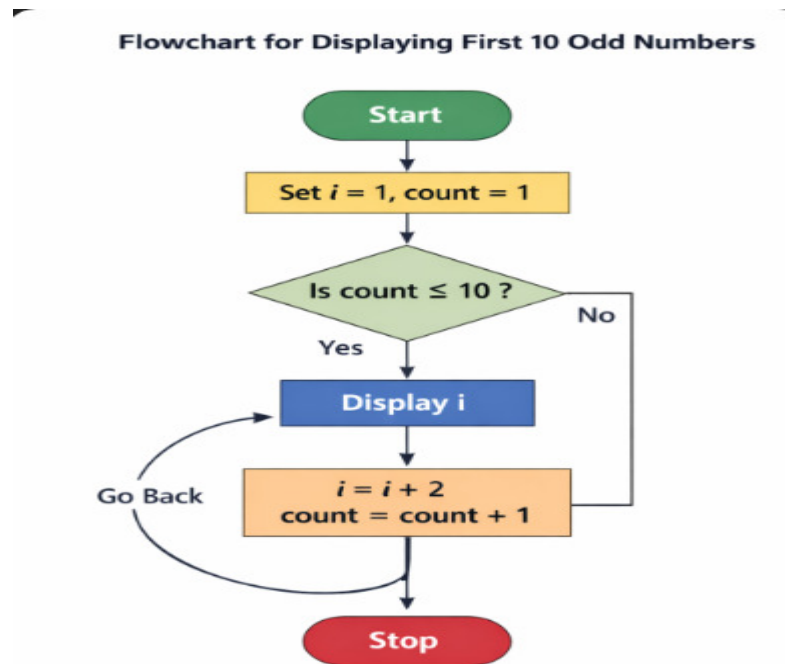
6) What is a flowchart? How is it useful?

sol:

A flowchart is a diagram that represents the steps of a process or an algorithm using symbols and arrows. It is useful because it helps visualize the flow of a program, makes complex logic easier to understand, and helps in planning and debugging code effectively.

7) Draw flowchart for displaying first 10 odd numbers.

sol:



8) What is entry-controlled loop?

sol:

An entry-controlled loop is a loop in which the condition is checked before the loop body is executed. This means if the condition is false at the beginning, the loop body may never run. Examples of entry-controlled loops in Python are the while loop and the for loop.

9) What are the four elements of a while loop in Python?

sol:

1. Initialization
2. Condition
3. Body
4. Increment/Update

10) What is the difference between else clause of if-else and else clause of Python loops?

sol:

Feature	if-else else clause	Loop else clause
When executed	When if condition is false	When loop finishes without a break
Purpose	Handle alternative case	Execute after normal loop termination

11) In which cases, the else clause of a loop does not get executed?

sol:

The else clause of a loop does not get executed if the loop is terminated prematurely using a break statement.

12) What are jump statement? name them?

sol:

Jump statements are used to alter the normal flow of a program by jumping to another part of the code. In Python, the jump statements are break, continue, and return.

13) How and when are named conditions useful?

sol:

Named conditions are useful when you want to give a meaningful name to a Boolean expression. They make the code more readable and easier to understand. Named conditions are helpful when the same condition is used multiple times or when the condition is complex.

14) What are endless loops ? Why do such loops occur?

sol:

Endless loops are loops that never stop and keep running forever. They occur when the loop condition never becomes false or when there is no statement in the loop to update variables so that the condition can eventually end.

15) How is break statement different from continue?

sol:

Statement	Purpose	Effect on Loop
break	Exits the current loop immediately	Terminates the loop entirely
continue	Skips the rest of the current iteration and moves to the next iteration	Loop continues with the next iteration