Python Exam – Theory & Practice

Part 1: Theory Definitions

1. for loop

The for loop is used to repeat a block of code for a known number of times. It is commonly used to iterate over sequences such as lists, strings, or ranges.

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2. while loop

The while loop is used to repeat a block of code as long as a specific condition is true. It is useful when the number of iterations is not known in advance.

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3. if statement

The if statement is used to execute a block of code when a condition is true.

4. elif statement

The elif statement is used to check another condition if the previous condition was false.

5. else statement

The else statement is executed when all previous conditions are false.

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6. Exception

An exception is an error that occurs during the execution of a program and may stop the program if it is not handled.

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7. try block

The try block is used to test code that may cause an exception.

8. except block

The except block is used to handle the error that occurs in the try block.

9. finally block

The finally block is executed whether an exception occurs or not.

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10. List

A list is an ordered, mutable data structure that allows duplicate values.

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11. Tuple

A tuple is an ordered, immutable data structure that allows duplicate values.

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12. Dictionary

A dictionary is a data structure that stores data in key-value pairs.

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13. Set

A set is an unordered data structure that does not allow duplicate values.

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14. Object

An object is an instance of a class that contains data and methods.

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15. Class

A class is a blueprint used to create objects.

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16. Object Oriented Programming (OOP)

OOP is a programming approach based on organizing code into classes and objects.

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17. self

Self refers to the current object inside a class and is used to access its variables and methods.

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18. Overriding

Overriding occurs when a child class provides a different implementation of a method defined in the parent class.

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19. break

The break statement is used to exit a loop completely.

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20. continue

The continue statement skips the current iteration and continues with the next one.

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21. Indexing

Indexing is used to access an element of a sequence using its position.

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22. Slicing

Slicing is used to extract a portion of a sequence.

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23. Negative Indexing

Negative indexing is used to access elements from the end of a sequence.

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24. Module

A module is a file that contains Python code such as functions and variables.

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25. Indentation

Indentation refers to the spaces at the beginning of a code line and is required in Python to define code blocks.

26. Casting

Casting is the process of converting one data type into another.

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27. Operator Precedence

Operator precedence defines the order in which operations are executed.

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28. Logical Operators

Logical operators such as and, or are used to combine conditions.

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29. Function

A function is a block of reusable code that performs a specific task.

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30. return keyword

The return keyword is used to send a value back from a function.

Part 2: Theory Questions

1. Explain the difference between for loop and while loop.
2. What is an exception in Python?
3. Explain try, except, and finally.
4. What is the difference between list and tuple?
5. What is OOP and why is it important?
6. Explain the use of self keyword.
7. What is the difference between break and continue?
8. What is a module and why do we use it?
9. Explain indexing and slicing.
10. What happens if a function does not have a return statement?

Part 3: MCQ Questions

1. Which loop is used when the number of iterations is known?
   A) while
   B) for
   C) if
   D) switch
2. Which data structure does not allow duplicate values?
   A) list
   B) tuple
   C) set
   D) dictionary
3. Which keyword is used to handle exceptions?
   A) try
   B) except
   C) error
   D) handle
4. What does the break statement do?
   A) Skips iteration
   B) Stops program
   C) Exits loop
   D) Restarts loop
5. What is returned by a function without return?
   A) 0
   B) False
   C) None
   D) Error

🔹 Summary 1: Python Theory (Quick Review)

Loops

- **for loop**: Used when the number of iterations is known.
- **while loop**: Used when the number of iterations is unknown and depends on a condition.

Conditions

- **if**: Executes code when condition is true.
- **elif**: Checks another condition if previous one is false.
- **else**: Executes when all conditions are false.

Exceptions

- **Exception**: Error during program execution.
- **try**: Tests code that may cause an error.
- **except**: Handles the error.
- **finally**: Executes in all cases.

Data Structures

- **List**: Ordered, mutable, allows duplicates.
- **Tuple**: Ordered, immutable, allows duplicates.
- **Dictionary**: Key-value pairs.
- **Set**: Unordered, no duplicates.

OOP

- **Class**: Blueprint for objects.
- **Object**: Instance of a class.
- **OOP**: Programming using classes and objects.
- **self**: Refers to current object.
- **Overriding**: Redefining a method in child class.

Loop Control

- **break**: Exits loop completely.
- **continue**: Skips current iteration.

Indexing & Slicing

- **Indexing**: Access element by position.
- **Slicing**: Extract part of sequence.
- **Negative indexing**: Access from the end.

Modules

- Used to organize and reuse code.
- Can import whole module or part of it.

Basics

- **Indentation**: Spaces that define code blocks.
- **Casting**: Converting data types.
- **Operator precedence**: Order of operations.
- **Logical operators**: and / or.
- **Function**: Reusable block of code.
- **return**: Sends value from function.

🔹 Summary 2: Exam Questions Review

Common Theory Questions

- Difference between for and while.
- What is an exception?
- Explain try, except, finally.
- Difference between list and tuple.
- What is OOP?
- Explain self keyword.

- Difference between break and continue.
- What is a module?
- What is indentation?
- What does a function return if no return is used?

Common MCQ Focus Points

- Choosing correct loop type.
- Identifying data structure properties.
- Understanding exception handling keywords.
- Knowing loop control behavior.
- Function return values.

✅ End of File

Good luck in your exam 🤍