Interview questions for Data Types, Operators, Conditional Statements, Looping Statements, Functions.

1) **Name four of the main data types in Python**.

→ Numbers, strings, lists, dictionaries, tuples, files, and sets are generally considered the main types of data. Types, None, and Booleans are sometimes also classified this way. The integer, floating-point, complex, fraction and decimal are numerical data types.

2) **Why are these data types known as Python's core data types?**

→ They are known as the core data types because they are part of the Python language itself and are always available to create other objects, you usually need to call functions in imported modules.

3) **What does immutable mean and what three types of Python core data types are considered immutable?**

→ An immutable data type is a type of object which cannot be modified after its creation. Numbers, strings, and tuples in Python fall into this category.

4) **What does sequence mean and which three types of data fall into this category?**

→ A sequence data type is a collection of objects ordered by a specific position. In Python, Strings, lists, and tuples are the data types based on sequences. The Sequences share common sequence operations, such as indexing, concatenation, and slicing, but also have type-specific method calls.

5) **What does mapping mean and what kind of data type is based on mapping?**

→ The term mapping refers to an object that maps keys to associated values. The Python dictionary is the only type of mapping in the base typeset. Mappings do not maintain any left-to-right position order; they support access to stored data by key, as well as type-specific method calls.

6) **What are operators?**

→ Operators in general are used to perform operations on values and variables in Python. These are standard symbols used for the purpose of logical and arithmetic operations.

7) **What are Relational Operators?**

→ Relational operators compares the values. It either returns True or False according to the condition.

8) **Which conditional statements are available in Python ?**

→ Conditional statements are the programming statements which alter the course of execution based on a condition. Like other functional programming languages, Python has following conditional statements.

i) Python If

ii) Python If-Else

iii) Python For

iv) Python While

9) Which looping statements are available in Python ?

→ Looping statements are those which repeat the execution of a set of statements in a cyclic manner based on a condition.

i) Python For

ii) Python While

10) How do you access elements of Tuple ?

→ Like in an Array, elements of Tuple can be accessed using index. Index of first element is 0, and index of last element in the tuple is (length of tuple – 1).

11) How are comments written in Python code ?

→ Single Line Comments start with # followed by comment content.

→ Multiple Line Comments are enclosed between triple single quotes or triple double quotes.

12) What module is used for generating random values?

→ Random

13)What keyword is used to skip back to the beginning of a loop?

→ Continue

14)What keyword is used to end looping completely?

→ Break

15)What is the tradeoff when using while loops for looping?

→ While loops are more flexible since you explicitly set the start and end conditions, but they require more setup than for loops.

16)What is lambda in Python?

→ Lambda is an anonymous function in Python, that can accept any number of arguments, but can only have a single expression.

17)What is pass in Python?

→ The pass keyword represents a null operation in Python. It is generally used for the purpose of filling up empty blocks of code which may execute during runtime but has yet to be written.

18)What is the difference between xrange and range in Python?

→ xrange() and range() are quite similar in terms of functionality. They both generate a sequence of integers, with the only difference that range() returns a Python list, whereas, xrange() returns an xrange object.

19)Explain split() and join() functions in Python?

→ You can use split() function to split a string based on a delimiter to a list of strings.

→ You can use join() function to join a list of strings based on a delimiter to give a single string.

20)What is the difference between Python Arrays and lists?

→ Arrays in python can only contain elements of same data types i.e., data type of array should be homogeneous. It is a thin wrapper around C language arrays and consumes far less memory than lists.

→ Lists in python can contain elements of different data types i.e., data type of lists can be heterogeneous. It has the disadvantage of consuming large memory.