### **Q1 : What are local variables and global variables in Python?**

**Ans :**

**Global Variables:** Variables declared outside a function or in global space are called global variables. These variables can be accessed by any function in the program.

**Local Variables:** Any variable declared inside a function is known as a local variable. This variable is present in the local space and not in the global space.

### **Q2 : What are functions in Python?**

***Ans :*** A function is a block of code which is executed only when it is called. To define aPython Function, the **def** keyword is used.

### **Q3 : What is \_\_init\_\_?**

***Ans :*** \_\_init\_\_ is a method or constructor inPython. This method is automatically called to allocate memory when a new object/ instance of a class is created.

### **Q4 : What does [::-1} do?**

***Ans :*** [::-1] is used to reverse the order of an array or a sequence.

### **Q5 : What are python iterators?**

***Ans :*** Iterators are objects which can be traversed though or iterated upon.

### **Q6 : What is the purpose of is, not and in operators?**

***ans:*** Operators are special functions. They take one or more values and produce a corresponding result.

is: returns true when 2 operands are true (Example: “a” is ‘a’)

not: returns the inverse of the boolean value

in: checks if some element is present in some sequence

### **Q7 : What is a dictionary in Python?**

**Ans :** The built-in datatypes in Python is called dictionary. It defines one-to-one relationship between keys and values. Dictionaries contain pair of keys and their corresponding values. Dictionaries are indexed by keys.

### **Q8 : What does len() do?**

***Ans :*** It is used to determine the length of a string, a list, an array, etc.

**Ex :** a = ‘abc’

print(len(a))

### **Q9 : How to add values to a python array?**

***Ans :*** Elements can be added to an array using the **append()**, **extend()** and the **insert (i,x)** functions.

### **Q10 : How to remove values to a python array?**

***Ans :*** Array elements can be removed using **pop()** or **remove()** method. The difference between these two functions is that the former returns the deleted value whereas the latter does not.

### **Q11. How are classes created in Python?**

**Ans :** Class in Python is created using the **class** keyword.

#### **Q12: What are the distinct features of Python?**

**Ans :** The distinct features of Python include the following.

1. Structured and functional programmings are supported.
2. It can be compiled to byte-code for creating larger applications.
3. Develops high-level dynamic data types.
4. Supports checking of dynamic data types.
5. Applies automated garbage collection.
6. It could be used effectively along with Java, COBRA, C, C++, ActiveX, and COM

#### **Q13 : Why do we need a break in Python?**

**Ans :** Break helps in controlling the Python loop by breaking the current loop from execution and transfer the control to the next block.

#### **Q14 : Why do we need a continue in Python?**

**Ans :** A continue also helps in controlling the Python loop but by making jumps to the next iteration of the loop without exhausting it.

#### **Q15 : Define self in Python**

**Ans :** An instance of a class or an object is self in Python. It is included as the first parameter. It helps to differentiate between the methods and attributes of a class with local variables.

#### **Q16 : Why do we need membership operators in Python?**

**Ans :** We need membership operators in Python with the purpose to confirm if the value is a member in another or not.

**Q17 : What is Python? What are the benefits of using Python?**

**Ans :** Python is a programming language with objects, modules, threads, exceptions and automatic memory management. The benefits of pythons are that it is simple and easy, portable, extensible, build-in data structure and it is an open source.

**Q18 : What is the difference between list and tuple?**

**Ans :** The difference between list and tuple is that list is mutable while tuple is not. Tuple can be hashed for e.g as a key for dictionaries.

**Q19 : What is pass in Python?**

**Ans :** Pass means, no-operation Python statement, or in other words it is a place holder in compound statement, where there should be a blank left and nothing has to be written there.

**Q20 : In Python what is slicing?**

**Ans :** A mechanism to select a range of items from sequence types like list, tuple, strings etc. is known as slicing.

**Q21 : What is negative index in Python?**

**Ans :** Python sequences can be index in positive and negative numbers. For positive index, 0 is the first index, 1 is the second index and so forth. For negative index, (-1) is the last index and (-2) is the second last index and so forth.

**Q22 : Mention the use of // operator in Python?**

**Ans :** It is a Floor Divisionoperator , which is used for dividing two operands with the result as quotient showing only digits before the decimal point. For instance, 10//5 = 2 and 10.0//5.0 = 2.0.

**Q23 : What is the range() function and what are its parameters?**

**Ans :** The range() function is used to generate a list of numbers. Only integer numbers are allowed, and hence, parameters can be both negative and positive.

**Q24 : Is indentation mandatory in Python?**

**Ans :** Yes, indentation is necessary for Python. Indentation helps specify a block of code. Thus, in a Python code, everything within loops, classes, functions, etc., is specified within an indented block. If your Python code isn’t indented correctly, there’ll be problems during the execution, and it will raise errors.

**Q25 : Explain the difference between Python arrays and lists.**

**Ans :** In Python, both arrays and lists are used to store data. However,

* Arrays can only contain elements of the same data types, meaning the data types of an array should be homogeneous.
* Lists can contain elements of different data types, which means that the data types of lists can be heterogeneous. Lists consume much more memory than arrays.

**Q26 : How to write comments in Python?**

**Ans :**  In Python, comments start with a # character.

**Q27 : What is == in Python?**

**Ans :** It is an operator which is used to check or compare the values of two objects

### **Q28 : Does Python have OOps concepts?**

***Ans :*** Python is an object-oriented programming language. This means that any program can be solved in python by creating an object model. However, Python can be treated as procedural as well as structural language.

### **Q29 : Can you call the base class method without creating an instance?**

**Ans :** Yes, you can call the base class without instantiating it if:

* It is a static method
* The base class is inherited by some other subclass

#### **Q30 : What is hybrid inheritance?**

**Ans :** Hybrid inheritance is a combination of multiple and multi-level inheritance.

#### **Q31 : What is a superclass?**

**Ans :** A superclass or base class is a class that acts as a parent to some other class or classes. For example, the Vehicle class is a superclass of class Car.

#### **Q32 : What is a subclass?**

**Ans :** A class that inherits from another class is called the subclass. For example, the class Car is a subclass or a derived of Vehicle class.