1. What is Python and why is it popular?

* It is fast growing most popular programming language.
* very beginner-friendly programming language.
* you are not a software developer but you can use Python. copying the files and folder, renaming them, and uploading them to a server, you can easily write a Python script that automates all that and save your time,
* python builds Data analysis, AIand ML, Automation, web app, mobile app, desktop app, testing, hacking
* less time with fewer lines of codes
* example C# - str.substring(0,3), javascript str.substr(0,3), python str[0:3]. simple and powerful syntax.
* High Level, cross-platform, age community, large ecosystem
* Multi-language with a simple, clean, and beginner-friendly syntax.

2. What are the differences between Python 2 and Python 3?

| **Python 2** | **Python 3** |
| --- | --- |
| less document support | more document support |
| less package support | more package support |
| print ' ' | print (' ') |
| slower performance due to design | Improve performance code run time compared to Python 2 |
| using default ASCII characters. To store unicode values you need to define them using 'u' | the default storing of the string is Unicode |
| relativity easy to port Python 2 to Python 3 | Python 3 is not backwardly compatible with Python 2 |

3. What is the difference between a tuple and a list in Python?

| **List** | **Tuple** |
| --- | --- |
| Mutable | immutable |
| More time consuming | Less time consuming |
| It consumes more memory | It consumes less memory |
| It has several built-in methods | It does not have many built-in methods |
| Unexpected changes and errors are more likely to occurs | It is hard to take places |

4. How do you create a dictionary in Python?

* A dictionary is a compound data type that allows us to work with key pair values.
* Easily access values from the dictionary.
* Add/Change the item from the dictionary. We can assign values to keys.
* We can remove the item from the dictionary by using the pop method.

5. What is a function in Python and how do you define one?

* Re-useable piece of code.
* Created for solving a specific problem.  
  Two types are
* Built-in-function (print(),range(),min(),max(),etc)
* Arean circle

Example  
 def Example\_program(radius)

Area = 3.14\*4\*4;

Return area

6. What is object-oriented programming (OOP) and how does it relate to Python?

* A very common programming paradigm(style of designing software)
* Developing large software projects is easier and more intuitive.
* Complex software in terms of a real-world object and their relationship to one another.

**Object**  
An entity or think in your program, often a noun

**Examples**

| **Properties** | **Behavior** |
| --- | --- |
| Name | Walk |
| Age | Talk |
| Address | Breath |

7. How do you handle exceptions in Python?

* The two important features to handle any unexpected error in your Python programs.
* Exception handling - This would be covered in this tutorial. Here is a list of standard Exceptions available in Python.
* Assertions − This would be covered in Assertions in Python.
* Try{Run this code}
* Except{eccute this code when there is an exception}
* Else{no exception? Run this code}
* Finally{always run this code}

8. How do you read and write files in Python?

**Write**

write() method writes any string to an open file. It is important to note that Python strings can have binary data and not just text. fileObject.write(string)

**Example**

fo = open("C:\\Users\\Muruganantham\\OneDrive\\Desktop\\NewTextDocument333.txt", "r")

fo.read("New line add the text")

**Read**

read() method reads a string from an open file. It is important to note that Python strings can have binary data. apart from text data. fileObject.read([count])

**Example**

fo =   
open("C:\\Users\\Muruganantham\\OneDrive\\Desktop\\NewTextDocument333.txt", "r")

print(fo.read())

9. How do you install and use external packages in Python?

* We can import into our file give as to access to the classes and the functions from the other file.
* There are lots of inbuilt modules that you can import into your code python.
* External once that you can download and install with pip and you can create your own.
* Use the keyword Import. We can access all the functions and classes within the math

10. How do you use the "if" statement in Python to perform conditional execution?

* The condition can be any expression that evaluates to a Boolean value (True or False).
* If the condition is True, the if statement will be executed.
* If the condition is False, the code block will be skipped.  
    
  **Example**

num = 5  
if num > 0:  
print("The number is positive.")  
  
**Output**  
The number is positive.